

**Kentucky Employees Retirement System  
County Employees Retirement System  
State Police Retirement System**

*Actuarial Valuation and Review  
as of June 30, 2004*

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**Kentucky Employees Retirement System**

*Actuarial Valuation and Review  
as of June 30, 2004*

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*November 11, 2004*

*Board of Trustees  
Kentucky Employees Retirement System  
Perimeter Park West  
1260 Louisville Road  
Frankfort, Kentucky 40601-6124*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of June 30, 2004. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2005 and analyzes the preceding year's experience.*

*The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.*

*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.*

*We look forward to reviewing this report at your next meeting and to answering any questions.*

*Sincerely,*

*THE SEGAL COMPANY*

By:   
*Leon F. (Rocky) Joyner, Jr., ASA, MAAA  
Vice President and Actuary*

  
*K. Eric Fredén, FSA, MAAA  
Associate Actuary*



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## **SECTION 1: Valuation Summary for the Kentucky Employees Retirement System**

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### **Purpose**

This report has been prepared by The Segal Company to present a valuation of the Kentucky Employees Retirement System as of June 30, 2004. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2004, provided by the Board;
- The assets of the Plan as of June 30, 2004, provided by the Auditor;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### **Significant Issues in Valuation Year**

The following key findings were the result of this actuarial valuation:

- The Kentucky Employees Retirement System's basic financial goal is to establish contributions which fully fund the System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
- The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30-year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
- The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior year's rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016.
- The rates calculated in this report may be adopted by the Board for July 1, 2005 through June 30, 2006.

**SECTION 1: Valuation Summary for the Kentucky Employees Retirement System**

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- The following summarizes the required contributions for the year beginning July 1, 2005 and compares them to the prior valuation amounts.

**Non-Hazardous**

<u>Plan</u>	<u>July 1, 2005 Rate</u>	<u>July 1, 2004 Rate</u>
Retirement	7.85%	5.11%
Insurance	<u>5.77</u>	<u>5.18</u>
Total	13.62%	10.29%

**Hazardous**

<u>Plan</u>	<u>July 1, 2005 Rate</u>	<u>July 1, 2004 Rate</u>
Retirement	8.52%	7.26%
Insurance	<u>13.07</u>	<u>12.21</u>
Total	21.59%	19.47%

- The increase in the total rate is due to:

**Non-Hazardous**

Retirement plan investment loss	1.63%
Retiree COLA	0.21
Insurance Phase-in*	0.59
Change in administrative expense assumption	0.02
Other experience	<u>0.88</u>
Total change	3.33%

**Hazardous**

Retirement plan investment loss	0.91%
Retiree COLA	0.10
Insurance Phase-in*	0.86
Other experience	<u>0.25</u>
Total change	2.12%

\* Includes a portion of all insurance plan gains and losses for the year.

**SECTION 1: Valuation Summary for the Kentucky Employees Retirement System**

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- The actuarial valuation report as of June 30, 2004 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan. Because the actuarial value of assets involves a smoothing method, changes in market value are not fully reflected immediately in the actuarial value of assets. Rather, that effect is spread over a period of years.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2004 are:

**Non-Hazardous**

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2004</u>	<u>Actuarial value as a percentage of market value</u>
Retirement	\$741,519,598	114.1%
Insurance	12,906,314	102.2

**Hazardous**

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2004</u>	<u>Actuarial value as a percentage of market value</u>
Retirement	\$30,643,256	108.4%
Insurance	7,031,506	104.3

These investment losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.25% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.25% rate and all other actuarial assumption are met, the contribution requirements would still increase in each of the next few years.

- The recommended contributions for the KERS Non-Hazardous Retirement Plan for the years ended June 30, 2003 and June 30, 2004 were \$45,578,833 and \$84,758,932, respectively. Actual contributions were \$7,597,450 and \$21,696,543. If the actual contributions had been equal to the recommended amounts, the recommended contribution for the upcoming year would have been reduced by approximately \$5,219,141, or 0.32% of payroll.

## SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

### Summary of Key Valuation Results

	<u>Kentucky Non-Hazardous</u>		<u>Kentucky Hazardous</u>		<u>Kentucky Totals</u>	
	June 30, 2004	June 30, 2003	June 30, 2004	June 30, 2003	June 30, 2004	June 30, 2003
<b>Contributions for next fiscal year:</b>						
Retirement	7.85%	5.11%	8.52%	7.26%	N/A	N/A
Insurance	<u>5.77</u>	<u>5.18</u>	<u>13.07</u>	<u>12.21</u>	<u>N/A</u>	<u>N/A</u>
Total	13.62%	10.29%	21.59%	19.47%	N/A	N/A
<b>Funded status as of valuation date:</b>						
<u>Retirement</u>						
Actuarial accrued liability	\$7,049,613,171	\$6,520,463,188	\$403,578,036	\$356,879,133	\$7,453,191,207	\$6,877,342,321
Actuarial value of assets	6,000,513,743	6,351,318,832	397,212,763	385,925,722	6,397,726,506	6,737,244,554
Funded ratio on actuarial value of assets	85.12%	97.41%	98.42%	108.14%	85.84%	97.96%
Market value of assets	\$5,258,994,145	\$4,929,443,185	\$366,569,507	\$320,524,691	5,625,563,652	5,249,967,876
Funded ratio on market value of assets	74.60%	75.60%	90.83%	89.81%	75.48%	76.34%
<u>Insurance</u>						
Actuarial accrued liability	\$2,335,905,365	\$2,093,210,321	\$323,503,563	\$283,178,335	\$2,659,408,928	\$2,376,388,656
Actuarial value of assets	600,586,961	553,885,082	169,158,879	151,459,500	769,745,840	705,344,582
Funded ratio on actuarial value of assets	25.71%	26.46%	52.29%	53.49%	28.94%	29.68%
Market value of assets	\$587,680,647	\$487,274,973	\$162,127,373	\$125,533,413	749,808,020	612,808,386
Funded ratio on market value of assets	25.16%	23.28%	50.12%	44.33%	28.19%	25.79%
<b>Demographic data as of valuation date:</b>						
Number of retired participants and beneficiaries	28,892	27,233	1,549	1,357	30,441	28,590
Number of vested former members	4,825	3,456	260	145	5,085	3,601
Number of former members due a refund	20,950	15,066	1,772	1,052	22,722	16,118
Number of active members	47,599	49,158	4,014	4,189	51,613	53,347
Total salary	\$1,645,412,496	\$1,658,604,696	\$126,664,812	\$129,088,956	\$1,772,077,308	\$1,787,693,652
Average salary	34,568	33,740	31,556	30,816	34,334	33,511

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

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### A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, C, and D.

The ratio of non-actives to actives has slowly but steadily climbed in both groups for the past decade. As the number of annuitants per active employee rises, cash flow is impacted. The system either becomes more dependent on investment income to cover benefit payments, or contributions must rise to meet these obligations. (For the non-hazardous plan, net contributions have been less than benefit payments in each of the last eight years. However, for the hazardous plan, net contributions have exceeded benefit payments in each of the last ten years.)

#### Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's non-hazardous valuation, there were 47,599 active members with an average age of 42.9, average service of 10.0 years and average salaries of \$34,568. The 49,158 active members in the prior valuation had an average age of 42.2, average service of 10.0 years and average salaries of \$33,740.

In the hazardous plan, there were 4,014 active members with an average age of 42.7, average service of 7.6 years and average salaries of \$31,556. The 4,189 active members in the prior valuation had an average age of 41.6, average service of 7.2 years and average salaries of \$30,816.

#### Inactive Members

In this year's valuation, there were 4,825 non-hazardous members with a vested right to a deferred or immediate vested benefit. In addition, there were 20,950 members entitled to a return of their employee contributions.

For the hazardous plan, there were 260 members with a vested right to a deferred or immediate vested benefit. In addition, there were 1,772 members entitled to a return of their employee contributions.

#### Retired Participants and Beneficiaries

As of June 30, 2004, 25,114 non-hazardous retired participants and 3,778 beneficiaries were receiving total monthly benefits of \$37,450,868. For comparison, in the previous valuation, there were 23,476 retired participants and 3,757 beneficiaries receiving monthly benefits of \$32,754,064.

For the hazardous plan, there were 1,382 retired participants and 167 beneficiaries were receiving total monthly benefits of \$1,341,584. For comparison, in the previous valuation, there were 1,185 retired participants and 172 beneficiaries receiving monthly benefits of \$1,081,227.

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**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*A historical perspective of how the member population has changed over the past nine valuations can be seen in these charts.*

**CHART 1A – Non-Hazardous  
Member Population: 1996 – 2004**

<b>Year Ended June 30</b>	<b>Active Members</b>	<b>Vested Terminated Members*</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
1996	47,145	2,416	19,468	0.46
1997	46,073	2,550	20,540	0.50
1998	46,342	2,735	20,955	0.51
1999	45,824	2,978	21,941	0.54
2000	46,897	3,073	23,760	0.57
2001	47,780	3,312	25,118	0.60
2002	48,555	3,415	26,703	0.62
2003	49,158	3,456	27,233	0.62
2004	47,599	4,825	28,892	0.71

**CHART 1B – Hazardous  
Member Population: 1996 – 2004**

<b>Year Ended June 30</b>	<b>Active Members</b>	<b>Vested Terminated Members*</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
1996	3,452	68	502	0.17
1997	3,532	77	585	0.19
1998	3,582	96	671	0.21
1999	3,889	96	780	0.23
2000	4,007	113	924	0.26
2001	4,228	123	1,053	0.28
2002	4,211	127	1,208	0.32
2003	4,189	145	1,357	0.36
2004	4,014	260	1,549	0.45

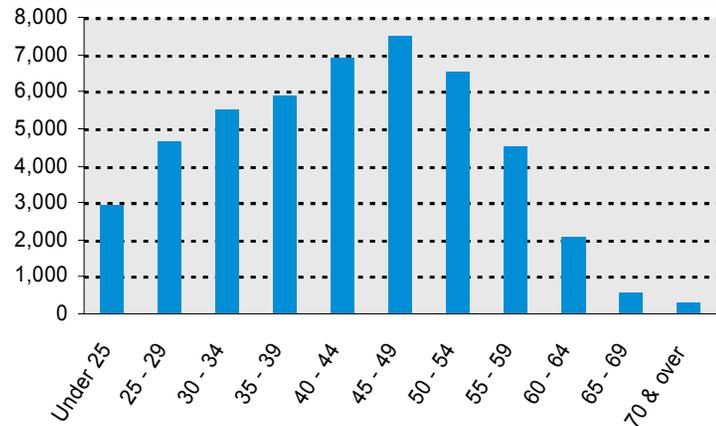
\*Excludes terminated members due a refund of employee contributions.

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*These graphs show a distribution of non-hazardous active members by age and by years of service.*

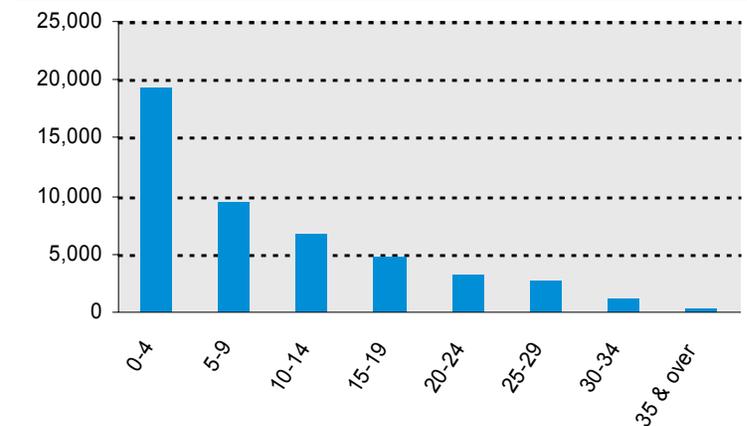
**CHART 2A – Non-Hazardous**

**Distribution of Active Members by Age as of June 30, 2004**



**CHART 3A – Non-Hazardous**

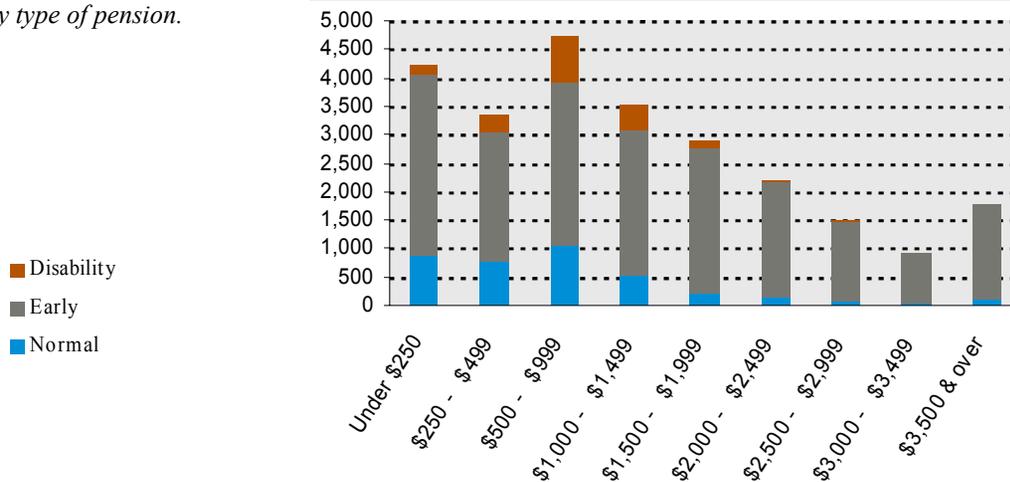
**Distribution of Active Members by Years of Service as of June 30, 2004**



*These graphs show a distribution of the current non-hazardous retired participants based on their monthly amount and age, by type of pension.*

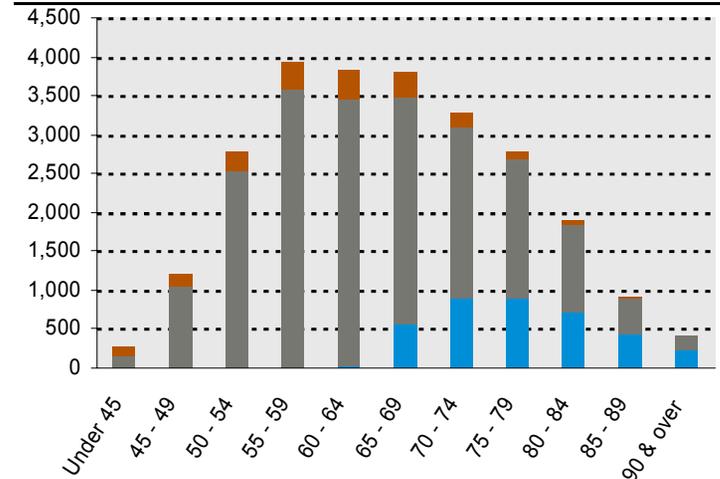
**CHART 4A – Non-Hazardous**

**Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2004**



**CHART 5A – Non-Hazardous**

**Distribution of Retired Participants by Type and by Age as of June 30, 2004**

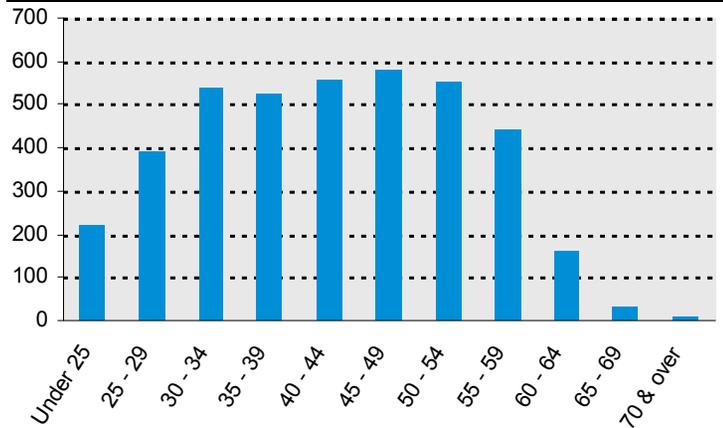


**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*These graphs show a distribution of hazardous active members by age and by years of service.*

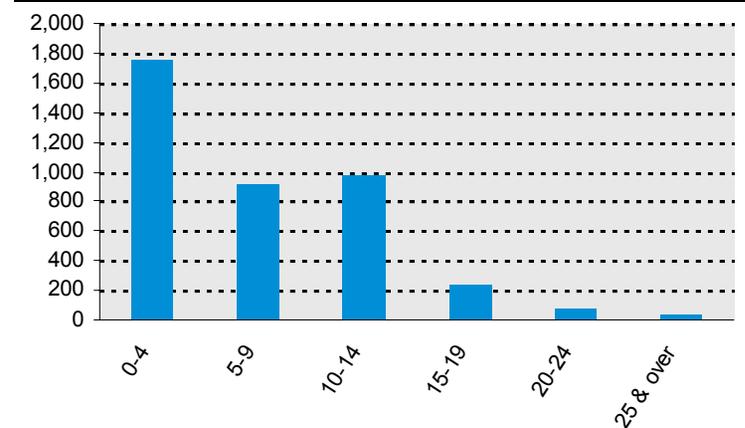
**CHART 2B – Hazardous**

**Distribution of Active Members by Age as of June 30, 2004**



**CHART 3B – Hazardous**

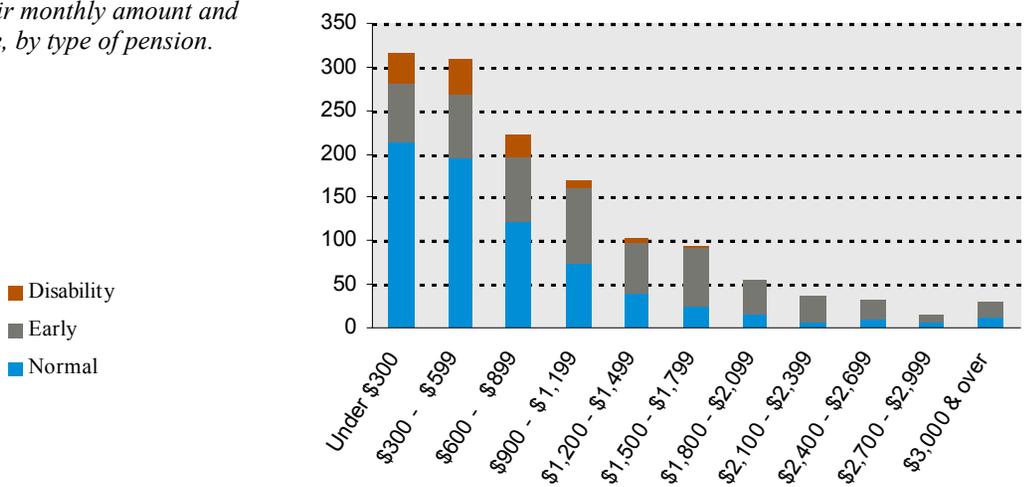
**Distribution of Active Members by Years of Service as of June 30, 2004**



*These graphs show a distribution of the current hazardous retired participants based on their monthly amount and age, by type of pension.*

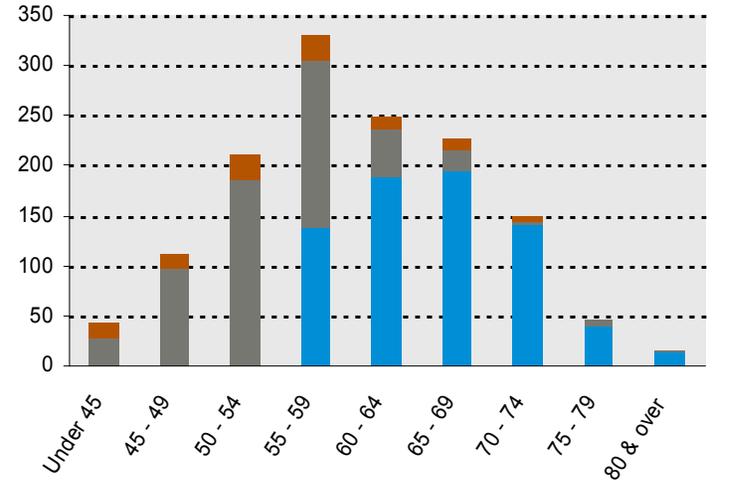
**CHART 4B – Hazardous**

**Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2004**



**CHART 5B – Hazardous**

**Distribution of Retired Participants by Type and by Age as of June 30, 2004**



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## **SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

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### **B. FINANCIAL INFORMATION**

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative and investment expenses) and net investment earnings (less common stock commissions and securities lending expense) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits E, F and G.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

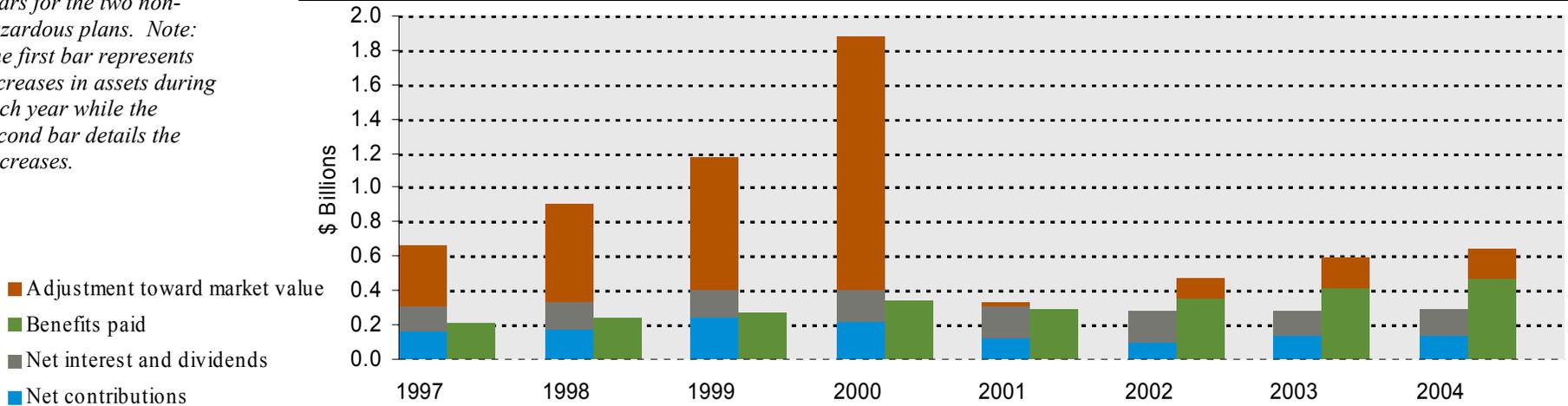
Both the actuarial value and market value of assets are representations of the System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*These charts depict the components of changes in the actuarial value of assets over the last eight years for the two non-hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

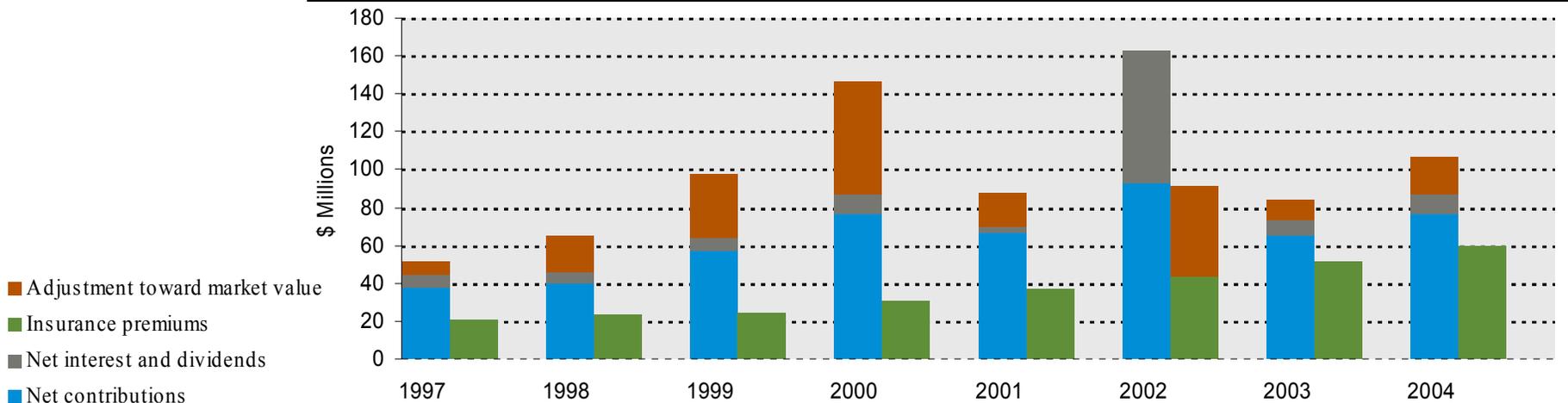
**CHART 6A – Non-Hazardous Retirement**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**



**CHART 6B – Non-Hazardous Insurance**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**



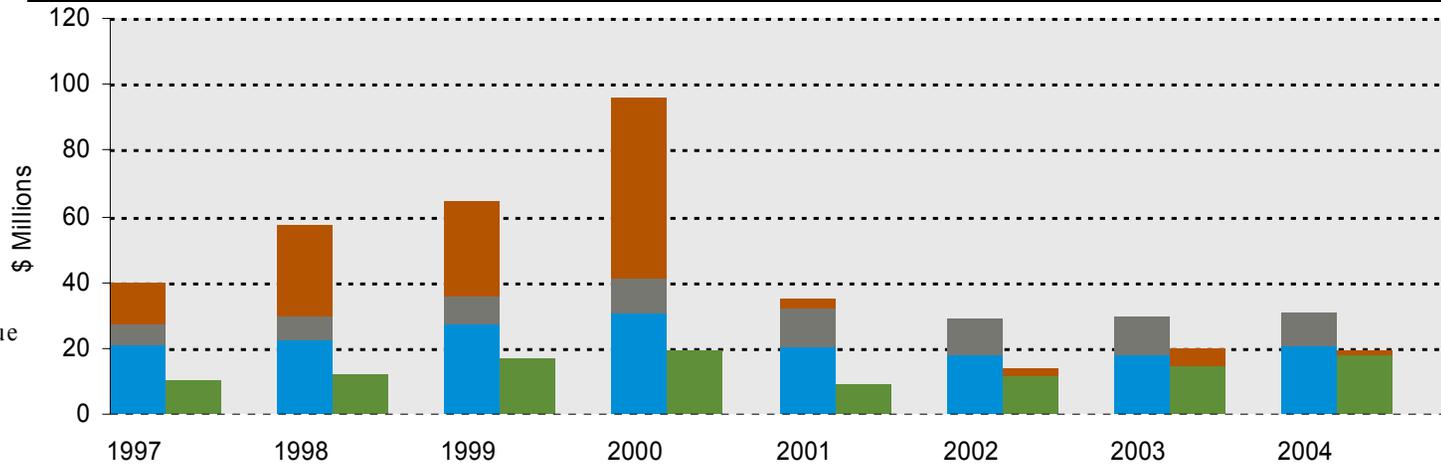
**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*These charts depict the components of changes in the actuarial value of assets over the last eight years for the two hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

**CHART 6C – Hazardous Retirement**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**

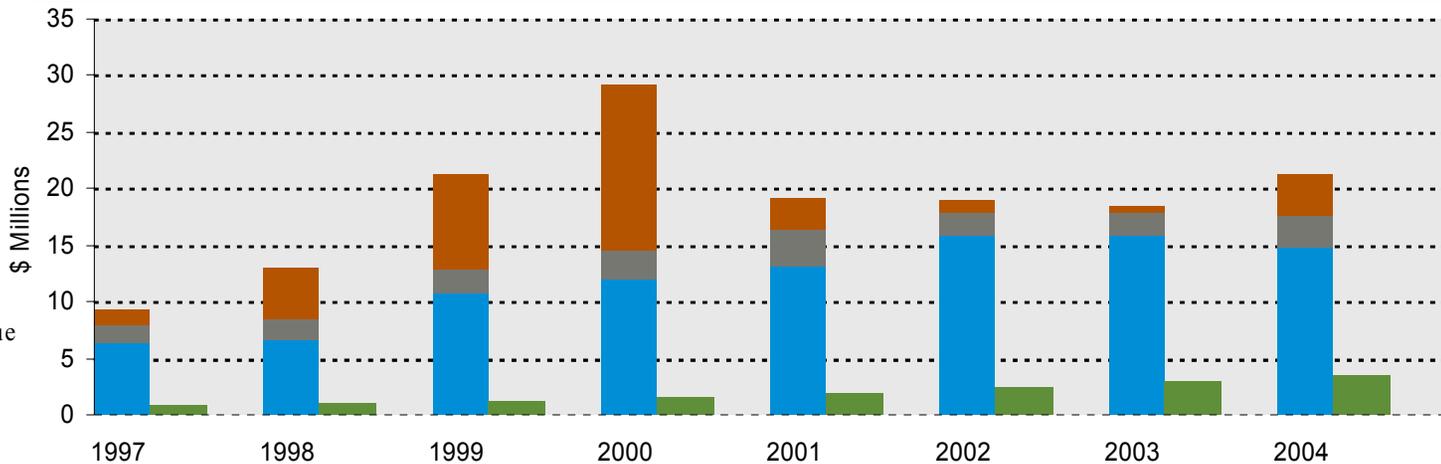
- Adjustment toward market value
- Benefits paid
- Net interest and dividends
- Net contributions



**CHART 6D – Hazardous Insurance**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**

- Adjustment toward market value
- Insurance premiums
- Net interest and dividends
- Net contributions



## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

These charts show the determination of the actuarial value of assets as of the valuation date.

### CHART 7A – Non-Hazardous Retirement

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

1. Market value of assets			\$5,258,994,145
	Original		Unrecognized
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$144,459,162	\$28,891,832	\$115,567,330
(b) Year ended June 30, 2003	-337,771,120	-67,554,224	-202,662,672
(c) Year ended June 30, 2002	-785,948,805	-157,189,761	-314,379,522
(d) Year ended June 30, 2001	-1,700,223,672	-340,044,734	-340,044,734
(e) Total unrecognized return			-741,519,598
3. Final actuarial value of assets: (1) – (2e)			<u>\$6,000,513,743</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			114.1%

### CHART 7B – Non-Hazardous Insurance

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

1. Market value of assets			\$587,680,647
	Original		Unrecognized
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$36,758,879	\$7,351,776	\$29,407,103
(b) Year ended June 30, 2003	-35,320,860	-7,064,172	-21,192,516
(c) Year ended June 30, 2002	-19,441,916	-3,888,383	-7,776,766
(d) Year ended June 30, 2001	-66,720,677	-13,344,135	-13,344,135
(e) Total unrecognized return			-12,906,314
3. Final actuarial value of assets: (1) – (2e)			<u>\$600,586,961</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			102.2%

\* Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

*These charts show the determination of the actuarial value of the assets as of the valuation date.*

### CHART 7C – Hazardous Retirement

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

1. Market value of assets			\$366,569,507
	Original		Unrecognized
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$11,700,671	\$2,340,134	\$9,360,537
(b) Year ended June 30, 2003	-16,213,796	-3,242,759	-9,728,277
(c) Year ended June 30, 2002	-40,605,179	-8,121,036	-16,242,072
(d) Year ended June 30, 2001	-70,167,218	-14,033,444	-14,033,444
(e) Total unrecognized return			-30,643,256
3. Final actuarial value of assets: (1) – (2e)			<u>\$397,212,763</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			108.4%

### CHART 7D – Hazardous Insurance

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

1. Market value of assets			\$162,127,373
	Original		Unrecognized
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$12,326,424	\$2,465,285	\$9,861,139
(b) Year ended June 30, 2003	-8,854,359	-1,770,872	-5,312,616
(c) Year ended June 30, 2002	-21,587,295	-4,317,459	-8,634,914
(d) Year ended June 30, 2001	-14,752,573	-2,950,515	-2,945,115
(e) Total unrecognized return			-7,031,506
3. Final actuarial value of assets: (1) – (2e)			<u>\$169,158,879</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			104.3%

\* Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

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**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

**CHART 8**

**Calculation of Unrecognized Return for the Year Ended June 30, 2004**

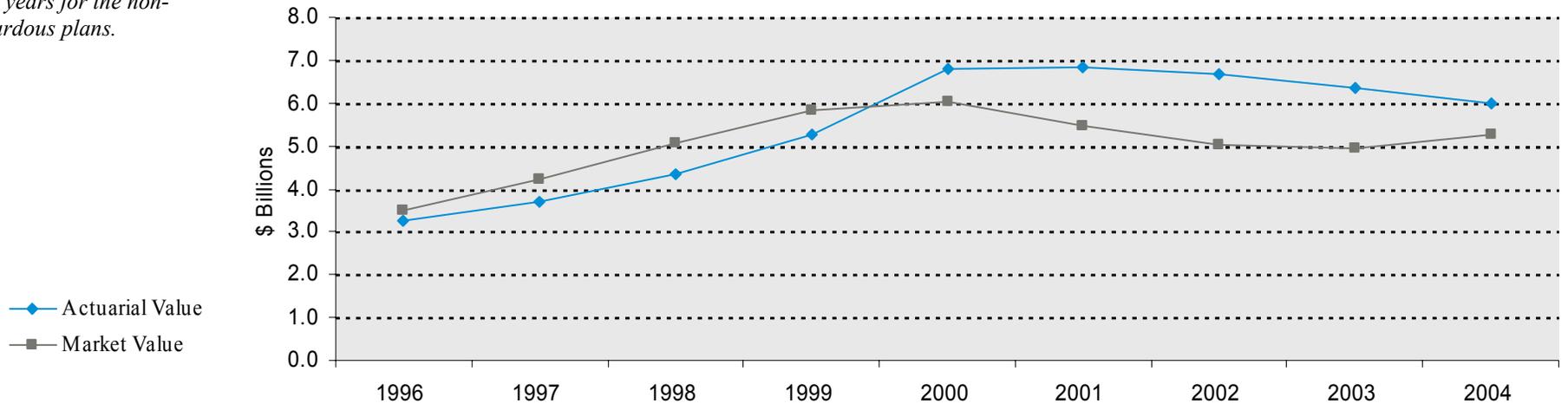
	<b>Non-Hazardous Retirement</b>	<b>Non-Hazardous Insurance</b>	<b>Hazardous Retirement</b>	<b>Hazardous Insurance</b>
1. Employer and member contributions	\$150,773,681	\$78,016,737	\$21,316,917	\$14,959,617
2. Benefit payments including refunds, or healthcare premiums	467,368,208	59,989,246	18,272,650	3,536,946
3. Administrative and investment expenses	8,871,985	787,370	638,243	116,907
4. Net cash flow: (1) - (2) - (3)	-325,466,512	17,240,121	2,406,024	11,305,764
5. Market value of assets as of June 30, 2003	4,929,443,185	487,274,973	320,524,691	125,533,413
6. Market value of assets as of June 30, 2004	5,258,994,145	587,680,647	366,569,507	162,127,373
7. Actuarial value of assets as of June 30, 2003	6,351,318,832	553,885,082	385,925,722	151,459,500
8. Average actuarial value of assets: (7) + [0.5 x (4)]	6,188,585,576	562,505,143	387,128,734	157,112,382
9. Expected return on an actuarial basis: 8.25% of (8)	510,558,310	46,406,674	31,938,121	12,961,772
10. Gain/(loss) for the year ended June 30, 2004: (6) - (5) - (4) - (9)	144,459,162	36,758,879	11,700,671	12,326,424
11. Unrecognized return as of June 30, 2004: 80% of (10)	115,567,330	29,407,103	9,360,537	9,861,139

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*These charts show the change in the actuarial value of assets versus the market value over the past nine years for the non-hazardous plans.*

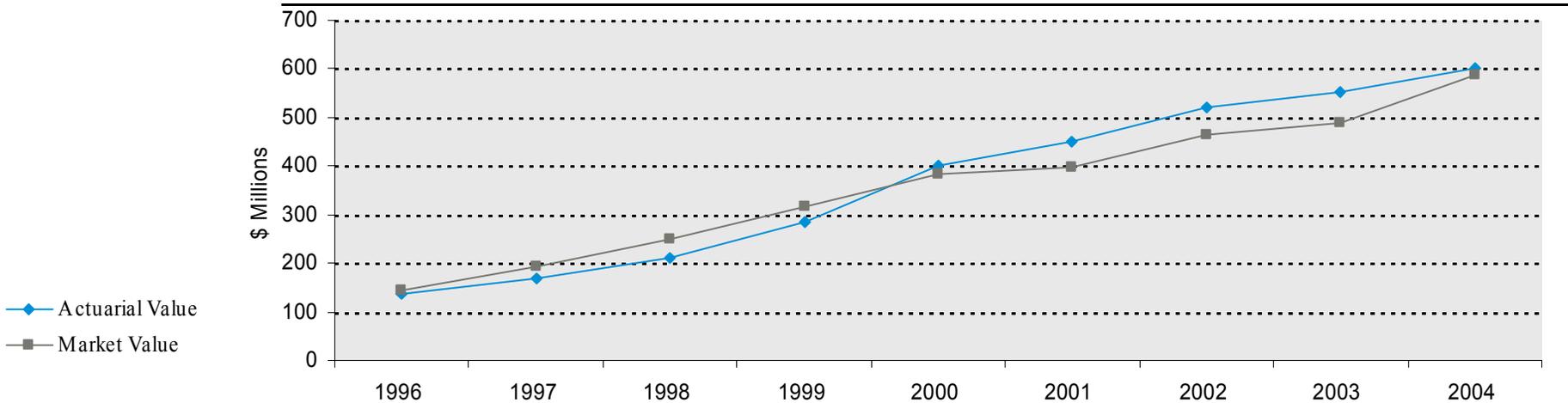
**CHART 9A – Non-Hazardous Retirement**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**



**CHART 9B – Non-Hazardous Insurance**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**

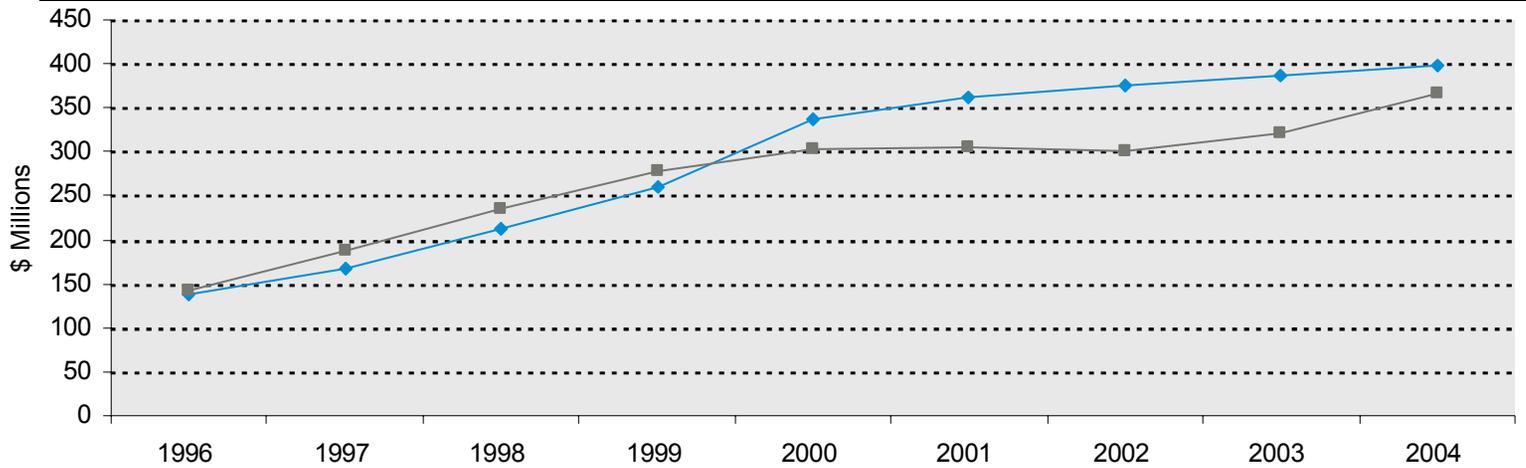


**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*These charts show the change in the actuarial value of assets versus the market value over the past nine years for the hazardous plans.*

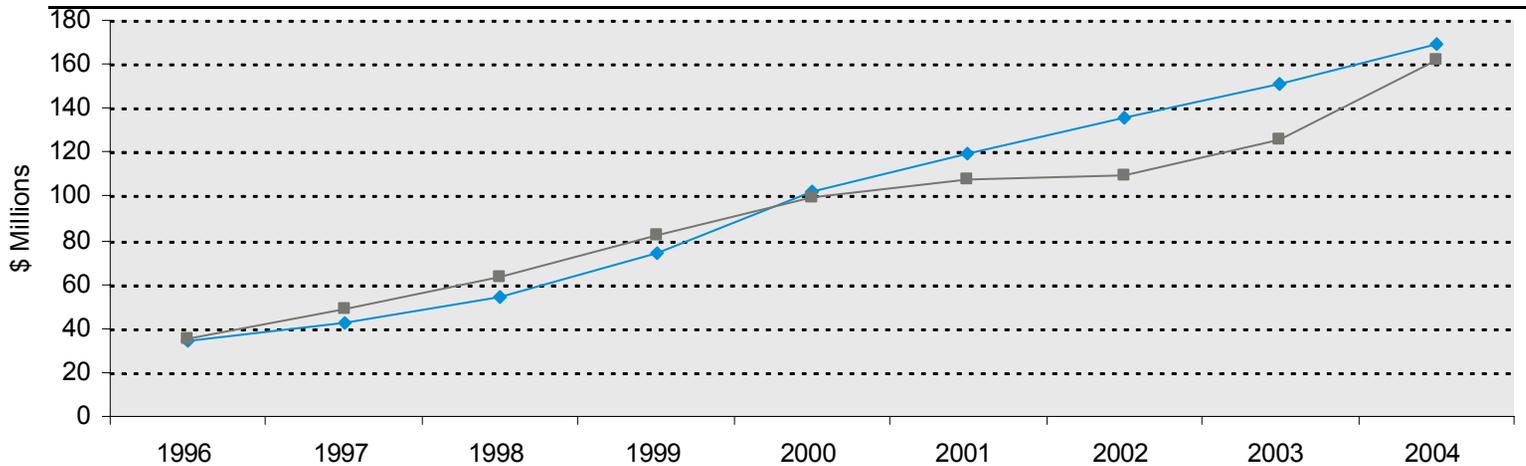
**CHART 9C – Hazardous Retirement**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**



**CHART 9D – Hazardous Insurance**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**



**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

**C. ACTUARIAL EXPERIENCE**

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

Chart 10 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

*This chart provides a summary of the actuarial experience during the past year.*

**CHART 10**  
**Actuarial Experience for Year Ended June 30, 2004**

	<b>Non-Hazardous Retirement</b>	<b>Non-Hazardous Insurance</b>	<b>Hazardous Retirement</b>	<b>Hazardous Insurance</b>
1. Net gain/(loss) from investments*	-\$535,896,887	-\$16,944,916	-\$23,057,103	-\$6,568,157
2. Net gain/(loss) from administrative expenses	-284,079	-523,725	8,862	-23,266
3. Net gain/(loss) from other experience**	<u>-310,455,353</u>	<u>-25,165,942</u>	<u>-14,202,370</u>	<u>818,478</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$846,636,319	-\$42,634,583	-\$37,250,611	-\$5,772,945

\* Details in Chart 11

\*\* Details in Chart 14

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

### Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. Chart 11 shows the net investment experience for each plan for the year.

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2004 with regard to its investments.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 12, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years.

### CHART 11

#### Actuarial Value Investment Experience for Year Ended June 30, 2004

*This chart shows the gain/(loss) due to investment experience.*

	Non-Hazardous Retirement	Non-Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. Actual return	-\$25,338,577	\$29,461,758	\$8,881,017	\$6,393,615
2. Average value of assets	6,188,585,576	562,505,143	387,128,734	157,112,382
3. Actual rate of return: (1) ÷ (2)	-0.41%	5.24%	2.29%	4.07%
4. Assumed rate of return	8.25%	8.25%	8.25%	8.25%
5. Expected return: (2) x (4)	\$510,558,310	\$46,406,674	\$31,938,120	\$12,961,772
6. Actuarial gain/(loss): (1) – (5)	<u>-\$535,896,887</u>	<u>-\$16,944,916</u>	<u>-\$23,057,103</u>	<u>-\$6,568,157</u>

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

**CHART 12A – Non-Hazardous Retirement**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$146,203,000	4.55%	\$353,572,876	11.01%	\$499,775,876	15.56%	\$744,519,136	21.35%
1998	152,888,000	4.19	581,509,620	15.92	734,397,620	20.10	910,518,691	21.82
1999	156,952,000	3.61	777,208,772	17.90	934,160,772	21.51	814,726,366	16.17
2000	182,697,000	3.51	1,480,107,063	28.44	1,662,804,063	31.95	296,093,000	5.12
2001	190,953,000	2.84	23,285,910	0.35	214,238,910	3.19	-356,720,409	-6.02
2002	176,702,012	2.63	-119,470,690	-1.78	57,231,322	0.85	-234,794,209	-4.38
2003	149,729,179	2.30	-176,923,267	-2.72	-27,194,088	-0.42	199,823,513	4.11
2004	<u>147,083,414</u>	2.38	<u>-172,421,991</u>	-2.79	<u>-25,338,577</u>	-0.41	<u>655,017,472</u>	13.74
Total	\$1,303,207,605		\$2,746,868,293		\$4,050,075,898		\$3,029,183,560	
					Average return	9.52%		7.69%

**CHART 12B – Non-Hazardous Insurance**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$6,266,000	4.27%	\$7,297,760	4.98%	\$13,563,760	9.25%	\$32,202,859	21.16%
1998	6,681,000	3.78	18,867,211	10.69	25,548,211	14.47	41,655,634	20.75
1999	7,812,000	3.45	33,590,703	14.85	41,402,703	18.30	32,809,846	12.31
2000	9,937,000	3.24	59,527,365	19.40	69,464,365	22.63	21,484,500	6.35
2001	3,134,000	0.76	17,691,919	4.27	20,825,919	5.03	-16,271,591	-4.09
2002	69,396,040	14.63	-47,483,602	-10.01	21,912,438	4.62	19,539,589	4.64
2003	8,087,818	1.53	11,170,429	2.12	19,258,247	3.65	8,234,078	1.74
2004	<u>9,553,427</u>	1.70	<u>19,908,331</u>	3.54	<u>29,461,758</u>	5.24	<u>83,165,553</u>	16.77
Total	\$120,867,285		\$120,570,116		\$241,437,400		\$222,820,468	
					Average return	8.52%		8.12%

Note: Each year's yield is weighted by the average asset value in that year.

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

**CHART 12C – Hazardous Retirement**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount,	Percent	Amount	Percent
1997	\$6,235,000	4.37%	\$12,614,790	8.85%	\$18,849,790	13.22%	\$33,085,394	22.25%
1998	7,448,000	4.33	27,633,380	16.07	35,081,380	20.41	37,614,603	19.57
1999	8,129,000	3.74	28,803,701	13.24	36,932,701	16.98	33,133,032	13.78
2000	10,191,000	3.84	55,002,145	20.72	65,193,145	24.56	11,840,783	4.16
2001	11,390,000	3.33	2,780,043	0.81	14,170,043	4.14	-7,670,713	-2.49
2002	10,843,431	2.97	-2,881,301	-0.79	7,962,130	2.18	-10,682,347	-3.46
2003	11,243,712	2.97	-5,435,260	-1.44	5,808,452	1.54	14,991,894	4.94
2004	<u>10,131,896</u>	2.62	<u>-1,250,879</u>	-0.32	<u>8,881,017</u>	2.29	<u>43,638,792</u>	13.56
Total	\$75,612,039		\$117,266,619		\$192,878,658		\$155,951,438	
						Average return	8.50%	7.40%

**CHART 12D – Hazardous Insurance**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$1,598,000	4.32%	\$1,417,382	3.83%	\$3,015,382	8.16%	\$7,814,169	20.54%
1998	1,770,000	3.90	4,654,412	10.24	6,424,412	14.14	9,312,446	18.15
1999	2,065,000	3.48	8,430,863	14.21	10,495,863	17.69	9,787,878	14.37
2000	2,571,000	3.22	14,603,588	18.30	17,174,588	21.52	6,166,757	7.02
2001	3,134,000	2.91	2,815,835	2.61	5,949,835	5.52	-2,878,243	-2.74
2002	2,060,266	1.63	1,076,714	0.85	3,136,980	2.49	-11,232,521	-9.83
2003	2,168,713	1.52	538,694	0.38	2,707,407	1.90	2,886,492	2.48
2004	<u>2,831,115</u>	1.80	<u>3,562,500</u>	2.27	<u>6,393,615</u>	4.07	<u>25,288,196</u>	19.28
Total	\$18,198,094		\$37,099,988		\$55,298,082		\$47,145,174	
						Average return	7.33%	6.62%

Note: Each year's yield is weighted by the average asset value in that year.

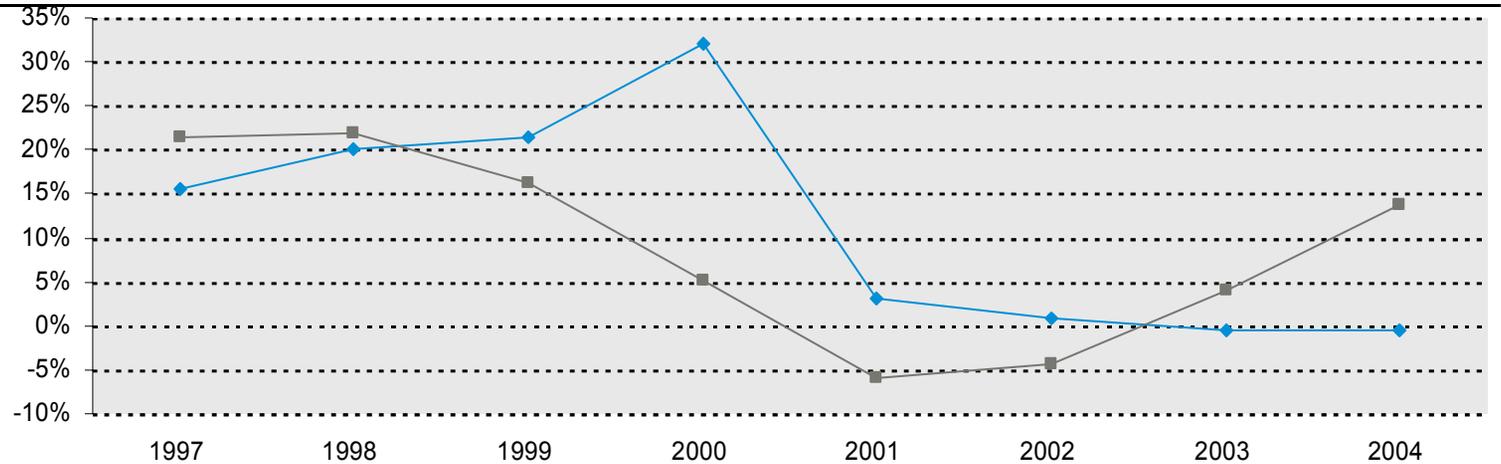
**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1997 - 2004 for the non-hazardous plans.*

◆ Actuarial Value  
 ■ Market Value

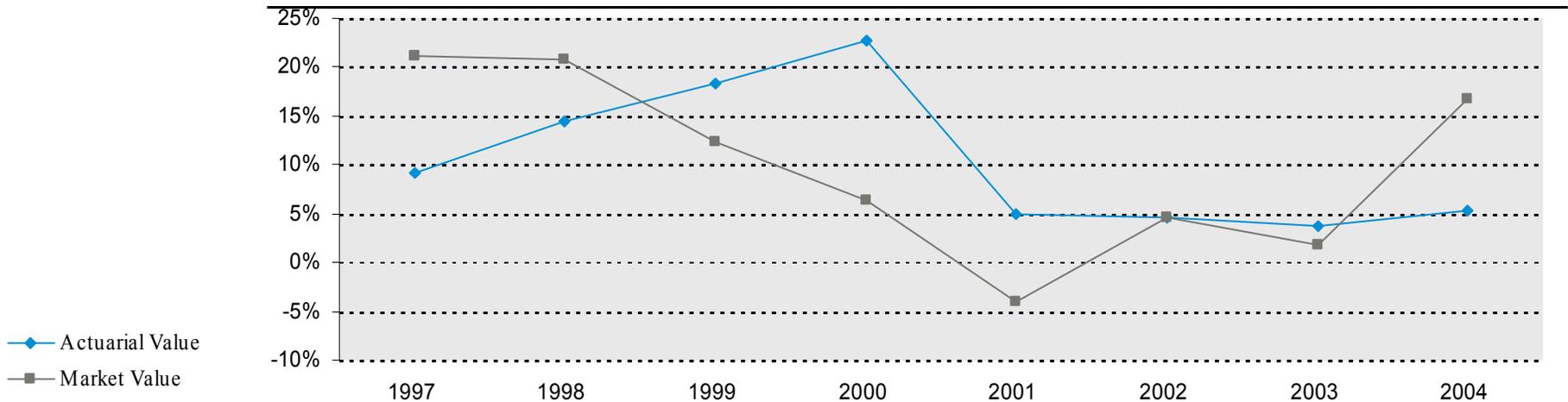
**CHART 13A – Non-Hazardous Retirement**

**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**



**CHART 13B – Non-Hazardous Insurance**

**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**



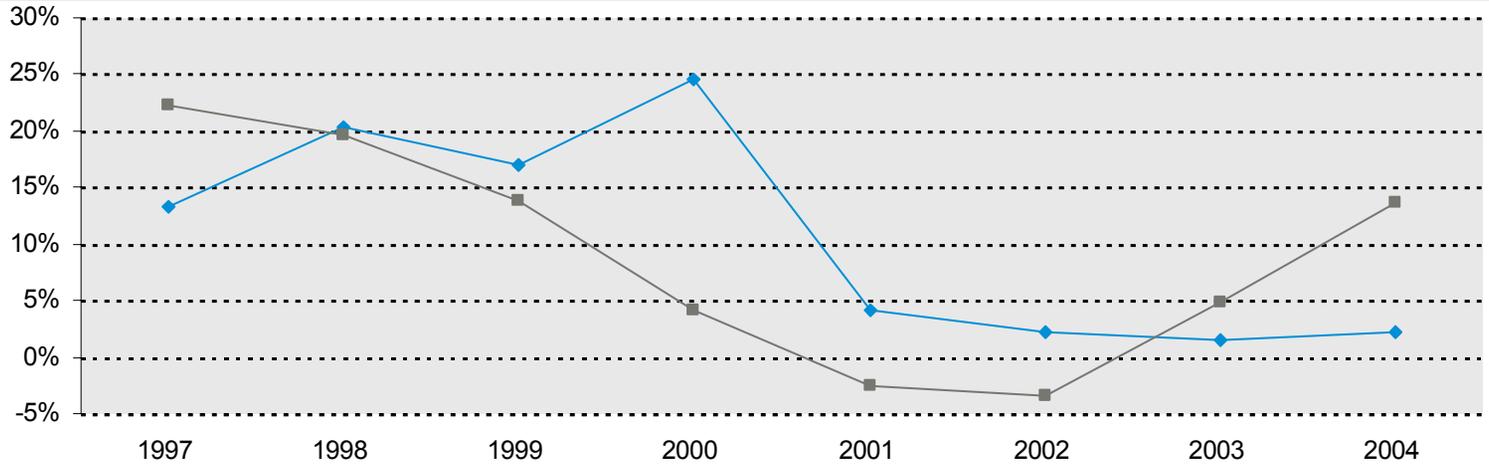
**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1997 – 2004 for the hazardous plans.*

◆ Actuarial Value  
 ■ Market Value

**CHART 13C – Hazardous Retirement**

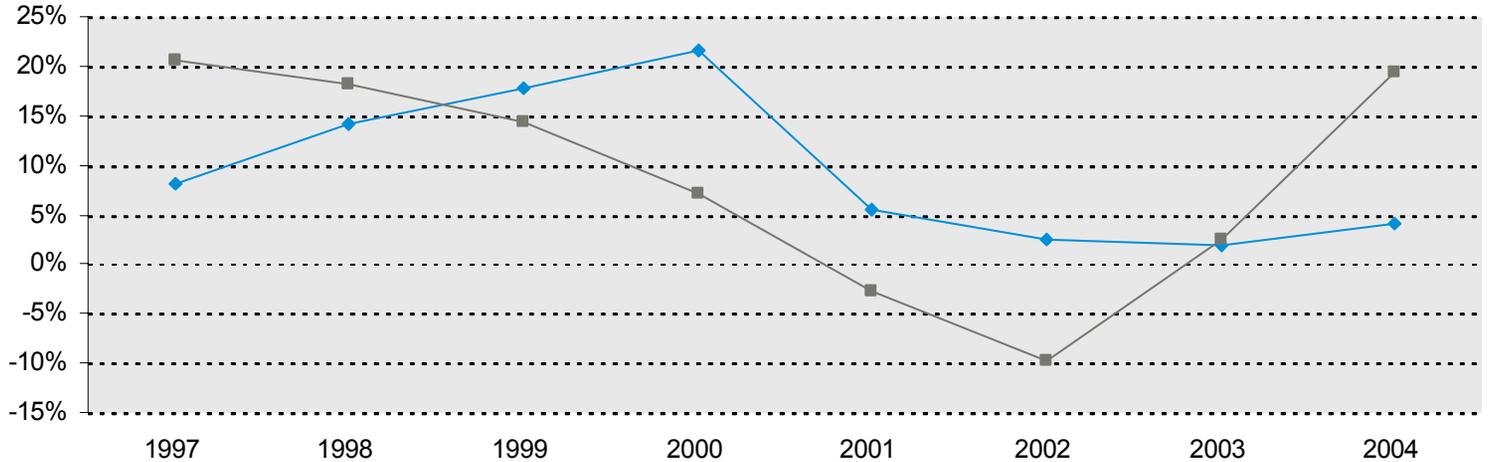
**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**



**CHART 13D – Hazardous Insurance**

**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**

◆ Actuarial Value  
 ■ Market Value



## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

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### Administrative Expenses

Current methodology includes an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

<u>Plan</u>	<u>Year End 2004 Assumption</u>	<u>Year End 2004 Actual Experience</u>	<u>Gain/(Loss)* for the Year</u>	<u>Year End 2005 Assumption</u>
Non-Hazardous Retirement	\$5,000,000	\$5,262,429	-\$284,079	\$5,300,000
Non-Hazardous Insurance	0	483,811	-523,725	0
Hazardous Retirement	400,000	391,813	8,862	400,000
Hazardous Insurance	0	21,493	-23,266	0

\* Includes interest to year-end.

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

**Other Experience**

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- COLAs granted in the year,
- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),

- the number of disability retirements, and
- salary increases different than assumed.

A brief summary of the demographic gain/(loss) experience of the Funds for the year ended June 30, 2004 is shown in the chart below.

*The chart shows elements of the experience gain/(loss) for the most recent year.*

**CHART 14**  
**Experience Due to Changes in Demographics for Year Ended June 30, 2004**

	<b>Non-Hazardous Retirement</b>	<b>Non-Hazardous Insurance</b>	<b>Hazardous Retirement</b>	<b>Hazardous Insurance</b>
1. COLA	-\$69,474,221	N/A	-\$2,628,298	N/A
2. Other	<u>-240,981,132</u>	<u>-\$25,165,941</u>	<u>-11,574,072</u>	<u>\$818,478</u>
3. Total	-\$310,455,353	-\$25,165,941	-\$14,202,370	\$818,478
4. Percentage of actuarial accrued liability	4.4%	1.1%	3.5%	0.3%

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## **SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

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### **D. RECOMMENDED CONTRIBUTION**

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30-year amortization of bases established each year as specified in the law governing the Plan.

Exhibit H in Section 3 provides details on these amortization bases.

The contribution rates as of June 30, 2004 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Charts 15 and 16 present the recommended contributions and reconciliations from the prior valuation.

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*This chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 15A – Non-Hazardous Retirement  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$156,784,156	9.53%	\$157,362,643	9.49%
2. Administrative expenses	5,300,000	0.32%	5,000,000	0.30%
3. Expected employee contributions	<u>-81,642,757</u>	<u>-4.96%</u>	<u>-82,402,448</u>	<u>-4.97%</u>
4. Employer normal cost: (1) + (2) + (3)	\$80,441,399	4.89%	\$79,960,195	4.82%
5. Actuarial accrued liability	7,049,613,171		6,520,463,188	
6. Actuarial value of assets	<u>6,000,513,743</u>		<u>6,351,318,832</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	\$1,049,099,428		\$169,144,356	
8. Payment on unfunded/(overfunded) actuarial accrued liability	48,684,401	2.96%	4,798,737	0.29%
9. Total recommended contribution: (4) + (8)	<u>\$129,125,800</u>	<u>7.85%</u>	<u>\$84,758,932</u>	<u>5.11%</u>
10. Projected salary	\$1,645,412,496		\$1,658,604,696	

*This chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

**CHART 16A – Non-Hazardous Retirement  
Reconciliation of Recommended Contribution from June 30, 2003 to June 30, 2004**

<b>Recommended Contribution as of June 30, 2003</b>	\$84,758,932
Effect of COLA for retirees	\$3,480,566
Effect of investment loss	26,847,722
Effect of change in administrative expense assumption	300,000
Effect of net other changes	<u>13,738,580</u>
<b>Total change</b>	<u>\$44,366,868</u>
<b>Recommended Contribution as of June 30, 2004</b>	\$129,125,800

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*The chart compares this valuation's recommended contributions with the prior valuation.*

**CHART 15B – Non-Hazardous Insurance  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Employer normal cost	\$101,368,760	6.16%	\$99,112,032	5.98%
2. Actuarial accrued liability	2,335,905,365		2,093,210,321	
3. Actuarial value of assets	<u>600,586,961</u>		<u>553,885,082</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$1,735,318,404		\$1,539,325,239	
5. Payment on unfunded/(overfunded) actuarial accrued liability	101,129,542	6.15%	88,453,158	5.33%
6. Full EANC contribution: (1) + (5)	<u>\$202,498,302</u>	<u>12.31%</u>	<u>\$187,565,190</u>	<u>11.31%</u>
7. Projected salary	\$1,645,412,496		\$1,658,604,696	
8. Prior year's funding rate	N/A	5.18%	N/A	4.67%
9. Years to reach full EANC	N/A	12	N/A	13
10. Additional amount for current year	N/A	0.59%	N/A	0.51%
11. Total recommended contribution rate: (8) + (10)	N/A	5.77%	N/A	5.18%

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*This chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 15C – Hazardous Retirement  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$20,076,404	15.85%	\$20,541,359	15.91%
2. Administrative expenses	400,000	0.32%	400,000	0.31%
3. Expected employee contributions	<u>-9,561,851</u>	<u>-7.55%</u>	<u>-9,736,239</u>	<u>-7.54%</u>
4. Employer normal cost: (1) + (2) + (3)	\$10,914,553	8.62%	\$11,205,120	8.68%
5. Actuarial accrued liability	403,578,036		356,879,133	
6. Actuarial value of assets	<u>397,212,763</u>		<u>385,925,722</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	\$6,365,273		-\$29,046,589	
8. Payment on unfunded/(overfunded) actuarial accrued liability*	-127,081	-0.10%	-1,830,431	-1.42%
9. Total recommended contribution: (4) + (8)	<u>\$10,787,472</u>	<u>8.52%</u>	<u>\$9,374,689</u>	<u>7.26%</u>
10. Projected salary	\$126,664,812		\$129,088,956	

*This chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

**CHART 16C – Hazardous Retirement  
Reconciliation of Recommended Contribution from June 30, 2003 to June 30, 2004**

<b>Recommended Contribution as of June 30, 2003</b>	\$9,374,689
Effect of COLA for retirees	\$131,674
Effect of investment loss	1,155,130
Effect of net other changes	<u>125,979</u>
<b>Total change</b>	<u>\$1,412,783</u>
<b>Recommended Contribution as of June 30, 2004</b>	\$10,787,472

\* As of the valuation date, the sum of the annual payments on the amortization bases is negative, despite a positive unfunded actuarial accrued liability.

**SECTION 2: Valuation Results for the Kentucky Employees Retirement System**

*The chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 15D – Hazardous Insurance  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Employer normal cost	\$19,731,921	15.58%	\$19,864,464	15.39%
2. Actuarial accrued liability	323,503,563		283,178,335	
3. Actuarial value of assets	<u>169,158,879</u>		<u>151,459,500</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$154,344,684		\$131,718,835	
5. Payment on unfunded/(overfunded) actuarial accrued liability	8,785,642	6.93%	7,422,833	5.75%
6. Full EANC contribution: (1) + (5)	<u>\$28,517,563</u>	<u>22.51%</u>	<u>\$27,287,297</u>	<u>21.14%</u>
7. Projected salary	\$126,664,812		\$129,088,956	
8. Prior year's funding rate	N/A	12.21%	N/A	11.47%
9. Years to reach full EANC	N/A	12	N/A	13
10. Additional amount for current year	N/A	0.86%	N/A	0.74%
11. Total recommended contribution rate: (8) + (10)	N/A	13.07%	N/A	12.21%

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**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT A**

**Table of Plan Coverage**

Category	Non-Hazardous			Hazardous		
	Year Ended June 30			Year Ended June 30		
	2004	2003	Change From Prior Year	2004	2003	Change From Prior Year
<b>Active members in valuation:</b>						
Number	47,599	49,158	-3.2%	4,014	4,189	-4.2%
Average age	42.9	42.2	N/A	42.7	41.6	N/A
Average service	10.0	10.0	N/A	7.6	7.2	N/A
Total salary	\$1,645,412,496	\$1,658,604,696	-0.8%	\$126,664,812	\$129,088,956	-1.9%
Average salary	34,568	33,740	2.5%	31,556	30,816	2.4%
Account balances	915,105,103	859,895,312	6.4%	78,817,575	71,414,721	10.4%
Total active vested members	32,482	32,229	0.8%	2,482	2,530	-1.9%
<b>Vested terminated members</b>	4,825	3,456	39.6%	260	145	79.3%
<b>Retired participants:</b>						
Number in pay status	23,196	21,563	7.6%	1,269	1,085	17.0%
Average age	66.8	67.2	N/A	61.0	61.3	N/A
Average monthly benefit	\$1,429	\$1,328	7.6%	\$935	\$870	7.5%
<b>Disabled members:</b>						
Number in pay status	1,918	1,913	0.3%	113	100	13.0%
Average age	61.3	60.9	N/A	55.2	55.6	N/A
Average monthly benefit	\$826	\$811	1.8%	\$513	\$464	10.6%
<b>Beneficiaries in pay status</b>	3,778	3,757	0.6%	167	172	-2.9%
<b>Inactive nonvested members due a refund</b>	20,950	15,066	39.1%	1,772	1,052	68.4%

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT B – Non-Hazardous**

**Members in Active Service as of June 30, 2004  
By Age, Years of Service, and Average Salary**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	2,974	2,862	112	--	--	--	--	--	--	--
	\$22,303	\$22,113	\$27,180	--	--	--	--	--	--	--
25 - 29	4,671	3,793	855	23	--	--	--	--	--	--
	26,585	26,161	28,350	\$30,863	--	--	--	--	--	--
30 - 34	5,532	2,959	1,854	684	35	--	--	--	--	--
	30,716	28,242	32,987	34,807	\$39,719	--	--	--	--	--
35 - 39	5,913	2,302	1,510	1,300	682	119	--	--	--	--
	33,643	28,764	34,225	37,733	39,282	\$43,649	--	--	--	--
40 - 44	6,922	2,263	1,374	1,128	1,101	812	242	2	--	--
	35,945	28,323	34,709	37,433	42,257	45,227	\$47,237	\$61,140	--	--
45 - 49	7,520	1,948	1,333	1,173	914	832	976	339	5	--
	37,984	29,145	32,921	37,638	40,785	45,453	48,228	54,014	\$70,865	--
50 - 54	6,543	1,598	1,099	1,015	789	703	729	532	78	--
	39,407	30,394	33,969	37,778	39,273	44,745	49,855	55,956	64,651	--
55 - 59	4,518	1,012	800	737	672	464	413	282	120	18
	39,545	30,501	34,311	36,558	39,508	43,983	49,638	59,474	66,117	\$69,001
60 - 64	2,104	402	394	375	385	217	189	83	36	23
	38,169	31,578	32,848	35,112	39,493	41,137	45,549	55,340	72,524	67,850
65 - 69	588	92	104	121	117	62	53	20	11	8
	39,539	28,743	34,767	34,889	40,839	43,603	54,710	56,461	59,323	75,540
70 & over	314	49	32	55	56	27	55	21	10	9
	36,741	22,373	31,664	31,928	30,488	39,525	44,163	53,101	61,368	82,076
Total	47,599	19,280	9,467	6,611	4,751	3,236	2,657	1,279	260	58
	\$34,568	\$27,440	\$33,173	\$36,965	\$40,246	\$44,591	\$48,658	\$56,146	\$66,185	\$71,476

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT B – Hazardous**

**Members in Active Service as of June 30, 2004  
By Age, Years of Service, and Average Salary**

Age	Years of Service								
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Under 25	223	214	9	--	--	--	--	--	--
	\$20,867	\$20,628	\$26,563	--	--	--	--	--	--
25 - 29	392	333	59	--	--	--	--	--	--
	24,162	23,716	26,681	--	--	--	--	--	--
30 - 34	540	307	205	28	--	--	--	--	--
	26,851	25,103	28,880	\$31,159	--	--	--	--	--
35 - 39	525	200	133	168	24	--	--	--	--
	30,279	24,480	31,712	35,303	\$35,492	--	--	--	--
40 - 44	555	192	125	155	62	19	2	--	--
	32,441	27,699	30,620	34,933	40,458	\$44,638	\$43,842	--	--
45 - 49	580	184	124	174	61	28	8	1	--
	35,347	27,988	35,724	37,426	42,481	47,811	52,827	\$56,892	--
50 - 54	553	173	125	190	33	20	10	2	--
	35,771	28,124	36,045	37,723	48,064	51,265	49,704	67,356	--
55 - 59	444	103	96	174	48	14	5	4	--
	37,198	29,103	35,240	39,395	42,801	51,209	58,550	54,156	--
60 - 64	161	43	33	69	8	4	2	1	1
	36,215	28,021	35,895	38,492	38,423	55,794	70,986	49,728	\$63,048
65 - 69	32	4	7	14	4	--	2	1	--
	36,572	22,086	32,150	34,660	46,674	--	63,150	58,656	--
70 & over	9	1	2	3	3	--	--	--	--
	37,729	34,344	30,012	39,708	42,024	--	--	--	--
Total	4,014	1,754	918	975	243	85	29	9	1
	\$31,556	\$25,412	\$32,208	\$36,936	\$42,026	\$48,850	\$54,082	\$57,401	\$63,048

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT C – Non-Hazardous  
Retired Lives Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	2,590	\$3,468,443.54	6,912	\$7,584,779.86	9,502	\$11,053,223.40
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	1,650	2,172,359.00	614	507,668.26	2,264	2,680,027.26
66-2/3% to beneficiary	731	1,518,165.35	243	405,029.62	974	1,923,194.97
50% to beneficiary	947	1,802,438.94	759	1,273,499.51	1,706	3,075,938.45
Pop-up option	2,125	4,117,770.01	1,475	2,375,760.54	3,600	6,493,530.55
10 years certain	0	0.00	0	0.00	0	0.00
10 years certain & life	1,003	1,098,727.35	1,626	1,756,038.94	2,629	2,854,766.29
Social Security option						
Age 62 basic	398	762,734.29	923	1,362,288.84	1,321	2,125,023.13
Age 62 survivorship	829	1,460,009.51	500	764,452.92	1,329	2,224,462.43
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	0	0.00	0	0.00	0	0.00
Dependent child	0	0.00	0	0.00	0	0.00
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	373	490,682.02	368	446,653.35	741	937,335.37
20 years certain & life	314	545,316.89	312	447,542.86	626	992,859.75
5 years certain	0	0.00	0	0.00	0	0.00
PLSO 12 month basic	17	17,864.58	67	74,160.36	84	92,024.94
PLSO 24 month basic	6	5,418.21	41	36,108.01	47	41,526.22
PLSO 36 month basic	39	21,490.71	72	37,272.17	111	58,762.88
PLSO 12 month survivor	21	27,342.02	22	33,529.90	43	60,871.92
PLSO 24 month survivor	26	26,469.58	20	23,232.88	46	49,702.46
PLSO 36 month survivor	<u>56</u>	<u>45,424.94</u>	<u>35</u>	<u>20,764.20</u>	<u>91</u>	<u>66,189.14</u>
Total	11,125	\$17,580,656.94	13,989	\$17,148,782.22	25,114	\$34,729,439.16

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT C – Hazardous  
Retired Lives Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	211	\$171,762.34	150	\$90,881.82	361	\$262,644.16
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	131	116,343.86	6	5,618.62	137	121,962.48
66-2/3% to beneficiary	44	38,885.33	6	5,910.94	50	44,796.27
50% to beneficiary	78	88,162.09	9	11,336.81	87	99,498.90
Pop-up option	271	291,020.73	43	32,507.82	314	323,528.55
10 years certain	20	24,268.04	3	2,643.94	23	26,911.98
10 years certain & life	79	59,146.98	32	18,448.76	111	77,595.74
Social Security option						
Age 62 basic	39	34,373.84	18	12,239.23	57	46,613.07
Age 62 survivorship	88	105,847.40	10	3,755.82	98	109,603.22
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	0	0.00	0	0.00	0	0.00
Dependent child	0	0.00	0	0.00	0	0.00
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	31	28,463.58	9	7,149.10	40	35,612.68
20 years certain & life	30	25,075.72	7	10,726.27	37	35,801.99
5 years certain	0	0.00	0	0.00	0	0.00
PLSO 12 month basic	3	2,897.85	5	4,213.52	8	7,111.37
PLSO 24 month basic	7	7,329.28	1	686.47	8	8,015.75
PLSO 36 month basic	12	11,021.21	10	6,758.70	22	17,779.91
PLSO 12 month survivor	5	5,673.43	1	916.47	6	6,589.90
PLSO 24 month survivor	6	6,837.40	3	3,983.55	9	10,820.95
PLSO 36 month survivor	<u>12</u>	<u>6,432.26</u>	<u>2</u>	<u>2,626.90</u>	<u>14</u>	<u>9,059.16</u>
Total	1,067	\$1,023,541.34	315	\$220,404.74	1,382	\$1,243,946.08

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT D – Non-Hazardous  
Beneficiary Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	2	\$331.42	19	\$13,936.93	21	\$14,268.35
Straight life (old plan)	0	0	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	1,614	1,086,549.54	270	177,477.58	1,884	1,263,997.12
66-2/3% to beneficiary	262	160,972.22	25	14,588.34	287	175,560.56
50% to beneficiary	460	189,691.96	89	40,841.63	549	230,533.59
Pop-up option	223	209,498.10	52	57,204.92	275	266,703.02
10 years certain	62	62,993.05	61	56,477.75	123	119,470.80
10 years certain & life	60	55,951.91	72	67,393.20	132	123,345.11
Social Security option						
Age 62 basic	0	0.00	3	2,308.59	3	2,308.59
Age 62 survivorship	148	195,575.02	36	31,148.25	184	226,723.27
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	15	5,744.46	0	0.00	15	5,744.46
Dependent child	2	502.36	2	708.74	4	1,211.10
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	70	64,382.88	32	30,593.98	102	94,976.86
20 years certain & life	59	67,515.08	44	33,782.71	103	101,297.79
5 years certain	46	43,401.53	45	49,302.13	91	92,703.66
PLSO 12 month basic	0	0.00	0	0.00	0	0.00
PLSO 24 month basic	1	503.69	0	0.00	1	503.69
PLSO 36 month basic	0	0.00	1	161.84	1	161.84
PLSO 12 month survivor	0	0.00	0	0.00	0	0.00
PLSO 24 month survivor	1	337.91	0	0.00	1	337.91
PLSO 36 month survivor	<u>1</u>	<u>1,166.12</u>	<u>1</u>	<u>414.98</u>	<u>2</u>	<u>1,581.10</u>
Total	3,026	\$2,145,117.25	752	\$576,311.57	3,778	\$2,721,428.82

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT D – Hazardous  
Beneficiary Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	0	\$0.00	2	\$262.73	2	\$262.73
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	74	45,467.31	2	666.39	76	46,133.70
66-2/3% to beneficiary	3	979.49	1	510.90	4	1,490.39
50% to beneficiary	13	4,236.95	0	0.00	13	4,236.95
Pop-up option	14	7,196.41	2	1,253.47	16	8,449.88
10 years certain	7	4,285.25	1	682.20	8	4,967.45
10 years certain & life	7	6,014.78	4	1,336.15	11	7,350.93
Social Security option						
Age 62 basic	0	0.00	0	0.00	0	0.00
Age 62 survivorship	9	10,004.54	1	18.49	10	10,023.03
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	0	0.00	0	0.00	0	0.00
Dependent child	6	1,632.68	7	1,734.14	13	3,366.82
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	0	0.00	2	700.43	2	700.43
20 years certain & life	4	981.77	0	0.00	4	981.77
5 years certain	5	6,949.30	2	1,688.93	7	8,638.23
PLSO 12 month basic	0	0.00	0	0.00	0	0.00
PLSO 24 month basic	0	0.00	0	0.00	0	0.00
PLSO 36 month basic	0	0.00	0	0.00	0	0.00
PLSO 12 month survivor	1	1,035.62	0	0.00	1	1,035.62
PLSO 24 month survivor	0	0.00	0	0.00	0	0.00
PLSO 36 month survivor	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>
Total	143	\$88,784.10	24	\$8,853.83	167	\$97,637.93

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT E – Non-Hazardous Retirement**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$21,696,543	\$7,597,450
Member contributions	129,077,138	137,124,487
Less administrative and investment expenses	<u>-8,871,985</u>	<u>-8,138,967</u>
Net contribution income	\$141,901,696	\$136,582,970
<b>Investment income:</b>		
Interest, dividends and other income	\$158,005,198	\$162,800,335
Recognition of capital appreciation	-172,421,991	-176,923,267
Less stock commissions and securities lending expense	<u>-10,921,784</u>	<u>-13,071,156</u>
Net investment income	<u>-25,338,577</u>	<u>-27,194,088</u>
<b>Total income available for benefits</b>	<b>\$116,563,119</b>	<b>\$109,388,882</b>
<b>Less benefit payments:</b>		
Benefit payments	-\$459,367,064	-\$404,896,488
Refunds	<u>-8,001,144</u>	<u>-7,257,758</u>
Net benefit payments	-\$467,368,208	-\$412,154,246
<b>Change in reserve for future benefits</b>	<b>-\$350,805,089</b>	<b>-\$302,765,364</b>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT E – Non-Hazardous Insurance**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$78,016,737	\$65,335,219
Less administrative and investment expenses	<u>-787,370</u>	<u>-371,356</u>
Net contribution income	\$77,229,367	\$64,963,863
<b>Investment income:</b>		
Interest, dividends and other income	\$10,666,411	\$8,936,118
Recognition of capital appreciation	19,908,331	11,170,429
Less stock commissions and securities lending expense	<u>-1,112,984</u>	<u>-848,300</u>
Net investment income	<u>29,461,758</u>	<u>19,258,247</u>
<b>Total income available for benefits</b>	<b>\$106,691,125</b>	<b>\$84,222,109</b>
<b>Less healthcare premium subsidies</b>	<b>-\$59,989,246</b>	<b>-\$51,587,482</b>
<b>Change in reserve for future benefits</b>	<b>\$46,701,879</b>	<b>\$32,634,627</b>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT E – Hazardous Retirement**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$9,769,580	\$7,322,607
Member contributions	11,547,337	11,553,286
Less administrative and investment expenses	<u>-638,243</u>	<u>-610,152</u>
Net contribution income	\$20,678,674	\$18,265,741
<b>Investment income:</b>		
Interest, dividends and other income	\$10,891,877	\$23,004,515
Recognition of capital appreciation	-1,250,879	-5,435,260
Less stock commissions and securities lending expense	<u>-759,981</u>	<u>-11,760,803</u>
Net investment income	<u>8,881,017</u>	<u>5,808,452</u>
<b>Total income available for benefits</b>	<b>\$29,559,691</b>	<b>\$24,074,193</b>
<b>Less benefit payments:</b>		
Benefit payments	-\$16,862,790	-\$13,372,965
Refunds	<u>-1,409,860</u>	<u>-1,159,808</u>
Net benefit payments	-\$18,272,650	-\$14,532,773
<b>Change in reserve for future benefits</b>	<b>\$11,287,041</b>	<b>\$9,541,420</b>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT E – Hazardous Insurance**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$14,959,617	\$15,883,263
Less administrative and investment expenses	<u>-116,907</u>	<u>-69,044</u>
Net contribution income	\$14,842,710	\$15,814,219
<b>Investment income:</b>		
Interest, dividends and other income	\$3,145,808	\$2,501,945
Recognition of capital appreciation	3,562,500	538,694
Less stock commissions and securities lending expense	<u>-314,693</u>	<u>-333,232</u>
Net investment income	<u>6,393,615</u>	<u>2,707,407</u>
<b>Total income available for benefits</b>	<b>\$21,236,325</b>	<b>\$18,521,626</b>
<b>Less healthcare premium subsidies</b>	<b>-\$3,536,946</b>	<b>-\$2,936,708</b>
<b>Change in reserve for future benefits</b>	<b>\$17,699,379</b>	<b>\$15,584,918</b>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT F – Non-Hazardous Retirement  
Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$760,613	\$386,424
<b>Accounts receivable:</b>		
Investment accounts receivable	\$177,965	\$164,961
Year-end interest receivable	26,196,011	27,079,407
Year-end accounts receivable	<u>24,758,644</u>	<u>28,458,448</u>
Total accounts receivable	51,132,620	55,702,816
<b>Investments:</b>		
Bonds	\$1,617,334,320	\$1,772,036,808
Stocks	3,237,197,081	2,686,553,684
Mortgage	255,569,903	257,880,946
Short-term investments	98,124,620	152,860,643
Real estate	2,580,396	6,641,045
Fixed assets	<u>319,011</u>	<u>348,001</u>
Total investments at market value	<u>5,211,125,331</u>	<u>4,876,321,127</u>
<b>Total assets</b>	\$5,263,018,564	\$4,932,410,367
<b>Less accounts payable</b>	-\$4,024,419	-\$2,967,182
<b>Net assets at market value</b>	<u>\$5,258,994,145</u>	<u>\$4,929,443,185</u>
<b>Net assets at actuarial value</b>	<u>\$6,000,513,743</u>	<u>\$6,351,318,832</u>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT F – Non-Hazardous Insurance**

**Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$32,779	\$31,327
<b>Accounts receivable:</b>		
Investment accounts receivable	\$33,862	\$20,559
Year-end interest receivable	1,412,579	1,180,298
Year-end accounts receivable	<u>3,989,694</u>	<u>5,457,039</u>
Total accounts receivable	5,436,135	6,657,897
<b>Investments:</b>		
Bonds	\$56,753,072	\$48,016,250
Stocks	422,401,561	343,727,178
Short-term investments	<u>103,360,672</u>	<u>89,311,504</u>
Total investments at market value	<u>582,515,305</u>	<u>481,054,933</u>
<b>Total assets</b>	\$587,984,219	\$487,744,156
<b>Less accounts payable</b>	-\$303,572	-\$469,183
<b>Net assets at market value</b>	<u>\$587,680,647</u>	<u>\$487,274,973</u>
<b>Net assets at actuarial value</b>	<u>\$600,586,961</u>	<u>\$553,885,082</u>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT F – Hazardous Retirement**

**Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$67,320	\$138,875
<b>Accounts receivable:</b>		
Investment accounts receivable	\$17,922	\$16,612
Year-end interest receivable	1,729,604	1,641,693
Year-end accounts receivable	<u>2,046,391</u>	<u>3,035,820</u>
Total accounts receivable	3,793,917	4,694,125
<b>Investments:</b>		
Bonds	\$105,308,294	\$104,852,057
Stocks	227,385,966	175,804,373
Mortgage	17,062,283	15,234,599
Short-term investments	11,330,548	18,056,968
Real estate	1,913,077	1,994,056
Fixed assets	<u>26,021</u>	<u>28,325</u>
Total investments at market value	<u>363,026,189</u>	<u>315,970,378</u>
<b>Total assets</b>	\$366,887,426	\$320,803,378
<b>Less accounts payable</b>	-\$317,919	-\$278,687
<b>Net assets at market value</b>	<u>\$366,569,507</u>	<u>\$320,524,691</u>
<b>Net assets at actuarial value</b>	<u>\$397,212,763</u>	<u>\$385,925,722</u>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT F – Hazardous Insurance**

**Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$5,206	\$25,058
<b>Accounts receivable:</b>		
Investment accounts receivable	\$10,591	\$6,430
Year-end interest receivable	412,749	327,938
Year-end accounts receivable	<u>616,980</u>	<u>1,334,207</u>
Total accounts receivable	1,040,320	1,668,575
<b>Investments:</b>		
Bonds	\$16,490,660	\$12,870,568
Stocks	129,646,401	102,823,545
Short-term investments	<u>15,050,638</u>	<u>8,203,293</u>
Total investments at market value	<u>161,187,699</u>	<u>123,897,406</u>
<b>Total assets</b>	\$162,233,225	\$125,591,039
<b>Less accounts payable</b>	-\$105,852	-\$57,626
<b>Net assets at market value</b>	<u>\$162,127,373</u>	<u>\$125,533,413</u>
<b>Net assets at actuarial value</b>	<u>\$169,158,879</u>	<u>\$151,459,500</u>

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT G – Non-Hazardous Retirement**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Member Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$102,968,000	\$62,886,000	\$499,775,876	\$4,514,000	\$215,104,000	\$3,683,995,005
1998	112,188,000	67,595,000	734,397,620	5,037,000	237,066,000	4,356,072,625
1999	107,515,000	141,399,000	934,160,772	5,330,000	269,477,000	5,264,340,397
2000	115,055,000	107,834,000	1,662,804,063	5,764,000	337,594,000	6,806,675,460
2001	21,911,066	104,125,142	214,238,910	5,974,401	296,233,490	6,844,742,687
2002	97,946	109,485,664	57,231,322	7,710,547	349,762,876	6,654,084,196
2003	7,597,450	137,124,487	-27,194,088	8,138,967	412,154,246	6,351,318,832
2004	21,696,543	129,077,138	-25,338,577	8,871,985	467,368,208	6,000,513,743

**EXHIBIT G – Non-Hazardous Insurance**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$37,710,000	\$13,563,760	\$32,000	\$21,144,000	\$168,479,973
1998	39,504,000	25,548,211	32,000	23,395,000	210,105,184
1999	56,770,000	41,402,703	92,000	24,481,000	283,704,887
2000	76,926,000	69,464,365	171,000	30,364,000	399,560,252
2001	66,874,871	20,825,919	344,092	37,286,345	449,630,605
2002	93,912,017	21,912,438	508,748	43,695,857	521,250,455
2003	65,335,219	19,258,247	371,356	51,587,482	553,885,082
2004	78,016,737	29,461,758	787,370	59,989,246	600,586,961

\* Net of stock commissions and securities lending expense

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT G – Hazardous Retirement**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Member Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$15,151,000	\$6,189,000	\$18,849,790	\$287,000	\$10,498,000	\$166,717,238
1998	16,033,000	6,520,000	35,081,380	303,000	11,834,000	212,214,618
1999	19,444,000	8,323,000	36,932,701	349,000	16,726,000	259,839,319
2000	21,633,000	9,375,000	65,193,145	415,000	19,412,000	336,213,464
2001	10,377,708	10,545,410	14,170,043	411,956	9,217,194	361,677,475
2002	7,764,651	10,740,148	7,962,130	482,320	11,277,782	376,384,302
2003	7,322,607	11,553,286	5,808,452	610,152	14,532,773	385,925,722
2004	9,769,580	11,547,337	8,881,017	638,243	18,272,650	397,212,763

**EXHIBIT G – Hazardous Insurance**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$6,279,000	\$3,015,382	\$8,000	\$866,000	\$42,684,374
1998	6,632,000	6,424,412	8,000	1,126,000	54,606,786
1999	10,774,000	10,495,863	13,000	1,284,000	74,579,649
2000	12,047,000	17,174,588	19,000	1,570,000	102,212,237
2001	13,226,298	5,949,835	33,246	1,982,382	119,372,742
2002	15,887,398	3,136,980	73,288	2,449,250	135,874,582
2003	15,883,263	2,707,407	69,044	2,936,708	151,459,500
2004	14,959,617	6,393,615	116,907	3,536,946	169,158,879

\* Net of stock commissions and securities lending expense

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT H – Non-Hazardous Retirement**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1990	30	\$256,534,456	\$25,313,987	16	\$325,439,485
06/30/1991	30	103,692,389	9,753,478	17	131,380,645
06/30/1992	30	-212,448,599	-19,048,529	18	-267,931,237
06/30/1993	30	-57,917,315	-4,950,018	19	-72,485,197
06/30/1994	30	59,519,052	4,848,865	20	73,721,076
06/30/1995	30	65,659,241	5,098,707	21	80,290,952
06/30/1996	30	-188,573,585	-13,957,911	22	-227,158,479
06/30/1997	30	-277,888,742	-19,589,408	23	-328,826,247
06/30/1998	30	-326,522,755	-21,921,726	24	-378,850,289
06/30/1999	30	-362,615,121	-23,185,595	25	-411,847,988
06/30/2000	30	-964,739,576	-58,748,000	26	-1,070,963,982
06/30/2001	30	584,703,884	33,910,149	27	633,525,671
06/30/2002	30	811,152,084	44,802,985	28	856,703,584
06/30/2003	30	811,953,677	42,711,690	29	834,906,136
06/30/2004	30	871,195,298	<u>43,645,727</u>	30	<u>871,195,298</u>
Total			\$48,684,401		\$1,049,099,428

\* Level percentage of salary

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT H – Non-Hazardous Insurance**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1996	30	\$988,745,810	\$73,185,361	22	\$1,191,057,563
06/30/1997	30	-31,222,593	-2,200,996	23	-36,945,749
06/30/1998	30	19,914,214	1,336,979	24	23,105,605
06/30/1999	30	-69,145,663	-4,421,171	25	-78,533,686
06/30/2000	30	44,198,913	2,691,501	26	49,065,515
06/30/2001	30	237,627,565	13,781,311	27	257,469,067
06/30/2002	30	36,483,146	2,015,102	28	38,531,914
06/30/2003	30	123,332,414	6,487,730	29	126,818,798
06/30/2004	30	164,749,377	<u>8,253,725</u>	30	<u>164,749,377</u>
Total			\$101,129,542		\$1,735,318,404

\* Level percentage of salary

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT H – Hazardous Retirement**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1990	30	-\$366,782	-\$36,193	16	-\$465,300
06/30/1991	30	8,515,857	801,016	17	10,789,787
06/30/1992	30	-2,222,347	-199,260	18	-2,802,730
06/30/1993	30	1,873,766	160,145	19	2,345,072
06/30/1994	30	2,736,468	222,933	20	3,389,425
06/30/1995	30	4,677,834	363,253	21	5,720,256
06/30/1996	30	-33,735,166	-2,497,022	22	-40,637,872
06/30/1997	30	-7,971,975	-561,974	23	-9,433,251
06/30/1998	30	-13,896,455	-932,965	24	-16,123,460
06/30/1999	30	-13,902,335	-888,915	25	-15,789,879
06/30/2000	30	-35,735,060	-2,176,093	26	-39,669,732
06/30/2001	30	18,907,681	1,096,559	27	20,486,440
06/30/2002	30	24,131,600	1,332,879	28	25,486,747
06/30/2003	30	26,494,066	1,393,683	29	27,243,005
06/30/2004	30	35,826,765	<u>1,794,873</u>	30	<u>35,826,765</u>
Total			-\$127,081		\$6,365,273

\* Level percentage of salary

**SECTION 3: Supplemental Information for the Kentucky Employees Retirement System**

**EXHIBIT H – Hazardous Insurance**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1996	30	\$61,002,123	\$4,515,278	22	\$73,484,045
06/30/1997	30	15,100,456	1,064,487	23	17,868,398
06/30/1998	30	2,832,306	190,152	24	3,286,203
06/30/1999	30	-10,377,564	-663,541	25	-11,786,541
06/30/2000	30	-3,445,265	-209,800	26	-3,824,613
06/30/2001	30	20,464,709	1,186,860	27	22,173,480
06/30/2002	30	3,711,155	204,981	28	3,919,560
06/30/2003	30	28,620,833	1,505,559	29	29,429,892
06/30/2004	30	19,794,260	<u>991,666</u>	30	<u>19,794,260</u>
Total			\$8,785,642		\$154,344,684

\* Level percentage of salary

### SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

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#### EXHIBIT I

#### Definitions of Pension Terms

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The following list defines certain technical terms for the convenience of the reader:

**Assumptions or Actuarial**

**Assumptions:**

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Normal Cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial Accrued Liability**

**For Actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial Accrued Liability**

**For Pensioners:**

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

**Unfunded Actuarial Accrued**

**Liability:**

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

### SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

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#### **Amortization of the Unfunded**

**Actuarial Accrued Liability:** Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

#### **Investment Return:**

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

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**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

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### EXHIBIT I – Non-Hazardous Retirement Summary of Actuarial Valuation Results

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The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 3,778 beneficiaries in pay status)		28,892
2. Members inactive during year ended June 30, 2004 with vested rights		4,825
3. Members active during the year ended June 30, 2004		47,599
Fully vested	32,482	
Not vested	15,117	
4. Inactive nonvested members due a refund as of June 30, 2004		20,950

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$162,084,156
2. Present value of future benefits		8,846,531,057
3. Present value of future normal costs		1,796,917,886
4. Actuarial accrued liability		7,049,613,171
Retired participants and beneficiaries	\$4,342,138,798	
Inactive members with vested rights	60,967,421	
Active members	2,596,748,423	
Inactive nonvested members due a refund	49,758,529	
5. Actuarial value of assets (\$5,258,994,145 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		6,000,513,743
6. Unfunded actuarial accrued liability		\$1,049,099,428

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**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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**EXHIBIT I – Non-Hazardous Insurance**  
**Summary of Actuarial Valuation Results**

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$101,368,760
2. Present value of future benefits		3,538,429,049
3. Present value of future normal costs		1,202,523,684
4. Actuarial accrued liability		2,335,905,365
Retired participants and beneficiaries	\$1,190,205,814	
Inactive members with vested rights	92,008,846	
Active members	1,053,690,705	
5. Actuarial value of assets (\$587,680,647 at market value as reported by Carpenter, Monunjoy & Bressler, PSC)		600,586,961
6. Unfunded actuarial accrued liability		\$1,735,318,404

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## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

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### EXHIBIT I – Hazardous Retirement

#### Summary of Actuarial Valuation Results

---

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 167 beneficiaries in pay status)		1,549
2. Members inactive during year ended June 30, 2004 with vested rights		260
3. Members active during the year ended June 30, 2004		4,014
Fully vested	2,482	
Not vested	1,532	
4. Inactive nonvested members due a refund as of June 30, 2004		1,772

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$20,476,404
2. Present value of future benefits		587,525,870
3. Present value of future normal costs		183,947,834
4. Actuarial accrued liability		403,578,036
Retired participants and beneficiaries	\$164,268,615	
Inactive members with vested rights	5,364,019	
Active members	228,475,188	
Inactive nonvested members due a refund	5,470,214	
5. Actuarial value of assets (\$366,569,507 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		397,212,763
6. Unfunded actuarial accrued liability		\$6,365,273

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**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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**EXHIBIT I – Hazardous Insurance**

**Summary of Actuarial Valuation Results**

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$19,731,921
2. Present value of future benefits		516,283,035
3. Present value of future normal costs		192,779,472
4. Actuarial accrued liability		323,503,563
Retired participants and beneficiaries	\$134,298,187	
Inactive members with vested rights	8,574,370	
Active members	180,631,006	
5. Actuarial value of assets (\$162,127,373 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		169,158,879
6. Unfunded actuarial accrued liability		\$154,344,684

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**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT II – Non-Hazardous Retirement**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$5,264,340,397	\$4,327,622,821	-\$936,717,576	121.65%	\$1,330,937,460	-70.38%
06/30/2000	6,806,675,460	4,876,825,772	-1,929,849,688	139.57%	1,432,316,220	-134.74%
06/30/2001	6,844,742,687	5,444,035,294	-1,400,707,393	125.73%	1,525,089,988	-91.84%
06/30/2002	6,654,084,196	6,026,094,764	-627,989,432	110.42%	1,597,344,487	-39.31%
06/30/2003	6,351,318,832	6,520,463,188	169,144,356	97.41%	1,658,604,696	10.20%
06/30/2004	6,000,513,743	7,049,613,171	1,049,099,428	85.12%	1,645,412,496	63.76%

**EXHIBIT II – Non-Hazardous Insurance**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$283,704,887	\$1,273,364,800	\$989,659,913	22.28%	\$1,330,937,460	74.36%
06/30/2000	399,560,252	1,457,475,358	1,057,915,106	27.41%	1,432,316,220	73.86%
06/30/2001	449,630,605	1,769,583,098	1,319,952,493	25.41%	1,525,089,988	86.55%
06/30/2002	521,250,455	1,907,683,881	1,386,433,426	27.32%	1,597,344,487	86.80%
06/30/2003	553,885,082	2,093,210,321	1,539,325,239	26.46%	1,658,604,696	92.81%
06/30/2004	600,586,961	2,335,905,365	1,735,318,404	25.71%	1,645,412,496	105.46%

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT II – Hazardous Retirement**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$259,839,319	\$204,282,788	-\$55,556,531	127.20%	\$103,970,148	-53.44%
06/30/2000	336,213,464	243,365,557	-92,847,907	138.15%	115,135,008	-80.64%
06/30/2001	361,677,475	285,193,761	-76,483,714	126.82%	123,647,407	-61.86%
06/30/2002	376,384,302	322,069,164	-54,315,138	116.86%	125,371,604	-43.32%
06/30/2003	385,925,722	356,879,133	-29,046,589	108.14%	129,088,956	-22.50%
06/30/2004	397,212,763	403,578,036	6,365,273	98.42%	126,664,812	5.03%

**EXHIBIT II – Hazardous Insurance**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$74,579,649	\$149,158,586	\$74,578,937	50.00%	\$103,970,148	71.73%
06/30/2000	102,212,237	175,167,613	72,955,376	58.35%	115,135,008	63.37%
06/30/2001	119,372,742	214,450,822	95,078,080	55.66%	123,647,407	76.89%
06/30/2002	135,874,582	236,819,050	100,944,468	57.37%	125,371,604	80.52%
06/30/2003	151,459,500	283,178,335	131,718,835	53.49%	129,088,956	102.04%
06/30/2004	169,158,879	323,503,563	154,344,684	52.29%	126,664,812	121.85%

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT II – Total Retirement Fund**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) - (a) / (b)]</b>	<b>Increase in Assets</b>
06/30/1956	N/A	\$16,200,000	\$16,200,000	100.00%	N/A
06/30/1961	17,530,559	49,201,024	31,670,465	64.37%	4,479,508
06/30/1966	55,752,113	127,889,238	72,137,125	56.41%	9,085,814
06/30/1971	125,460,976*	185,075,453	59,614,477	32.21%	18,353,116
06/30/1975	218,909,209*	296,343,758	77,434,549	26.13%	26,529,526
06/30/1976	256,376,790*	387,214,910	130,838,120	33.79%	37,467,581
06/30/1977	296,743,905*	446,255,236	149,511,331	33.50%	40,367,115
06/30/1978	338,826,998*	507,324,915	168,497,917	33.21%	42,083,093
06/30/1979	389,418,451*	592,095,113	202,676,662	34.23%	50,591,453
06/30/1980	460,355,868*	710,126,703	249,770,835	35.17%	70,937,417
06/30/1981	527,425,266	692,160,395	164,735,129	23.80%	67,069,398
06/30/1982	614,446,898	810,250,589	195,803,691	24.17%	87,021,632
06/30/1983	710,095,878	862,291,959	152,196,081	17.65%	95,648,980
06/30/1984	814,553,823	1,016,088,830	201,535,007	19.83%	104,457,945
06/30/1985	934,480,773	1,104,429,988	169,949,215	15.39%	119,926,950
06/30/1986	1,079,353,421	1,245,083,143	166,635,243	13.38%	144,872,648
06/30/1987	1,264,000,419	1,384,259,808	120,259,389	8.69%	184,646,998
06/30/1988	1,426,056,402	1,561,743,738	135,687,336	8.69%	162,055,983
06/30/1989	1,588,609,098	1,734,607,903	145,998,805	8.42%	162,552,696
06/30/1990	1,799,321,738	2,055,489,412	256,167,674	12.46%	210,712,640
06/30/1991	1,913,214,931	2,288,611,147	375,396,216	16.40%	113,893,193
06/30/1992**	2,354,482,321	2,525,190,930	170,708,609	6.76%	441,267,390
06/30/1993	2,585,209,537	2,703,771,076	118,561,539	4.39%	230,727,216
06/30/1994	2,729,048,987	2,912,050,275	183,001,288	6.28%	143,839,450
06/30/1995	2,983,813,538	3,240,852,288	257,038,750	7.93%	244,764,551
06/30/1996	3,375,295,577	3,415,404,483	40,108,906	1.17%	391,482,039

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT II – Total Retirement Fund (continued)**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) - (a) / (b)]</b>	<b>Increase in Assets</b>
06/30/1997	3,850,712,243	3,603,966,110	-246,746,133	-6.85%	475,416,666
06/30/1998	4,568,287,243	3,971,749,822	-596,537,421	-15.02%	717,575,000
06/30/1999	5,524,179,716	4,531,905,609	-992,274,107	-21.90%	955,892,473
06/30/2000	7,142,888,924	5,120,191,329	-2,022,697,595	-39.50%	1,618,709,208
06/30/2001***	7,206,420,161	5,729,229,055	-1,477,191,106	-25.78%	63,531,237
06/30/2002	7,030,468,498	6,348,163,928	-682,304,570	-10.75%	-175,951,663
06/30/2003	6,737,244,554	6,877,342,321	140,097,767	2.04%	-293,223,944
06/30/2004	6,397,726,506	7,453,191,207	1,055,464,701	14.16%	-339,518,048

\* Includes capitalized appreciation of investments.

\*\* Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

\*\*\* Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

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**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT II – Total Insurance Fund**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) – (a)/(b)]</b>	<b>Increase in Assets</b>
06/30/1990	\$32,722,932	\$719,493,806	\$686,770,874	95.45%	N/A
06/30/1991	46,549,335	804,674,050	758,124,715	94.22%	13,826,403
06/30/1992	62,465,626	1,001,703,695	939,238,069	93.76%	15,916,291
06/30/1993	77,673,575	1,177,861,283	1,100,187,708	93.41%	15,207,949
06/30/1994	99,083,533	1,444,612,678	1,345,529,145	93.14%	21,409,958
06/30/1995	127,292,191	1,462,174,101	1,334,881,910	91.29%	28,208,658
06/30/1996**	172,646,205	1,222,394,138	1,049,747,933	85.88%	45,354,014
06/30/1997	211,164,347	1,274,464,242	1,063,299,895	83.43%	38,518,142
06/30/1998	264,711,970	1,379,578,155	1,114,866,185	80.81%	53,547,623
06/30/1999	358,284,536	1,422,523,386	1,064,238,850	74.81%	93,572,566
06/30/2000	501,772,489	1,632,642,971	1,130,870,482	69.27%	143,487,953
06/30/2001***	569,003,346	1,984,033,920	1,415,030,574	71.32%	67,230,857
06/30/2002	657,125,037	2,144,502,931	1,487,377,894	69.36%	88,121,691
06/30/2003	705,344,582	2,376,388,656	1,671,044,074	70.32%	48,219,545
06/30/2004	769,745,840	2,659,408,928	1,889,663,088	71.06%	64,401,258

\*\* Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

\*\*\* Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT III – Non-Hazardous**

**Supplementary Information Required by the GASB**

<b>Valuation date</b>	June 30, 2004
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Level percent of salary
<b>Remaining amortization period</b>	16 to 30 years
<b>Asset valuation method</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

**Actuarial assumptions:**

Investment rate of return	8.25%
Payroll growth	5.00%

**Plan membership:**

Retired participants and beneficiaries receiving benefits	28,892
Terminated members entitled to, but not yet receiving benefits	4,825
Active members	<u>47,599</u>
Total	81,316

**Contracts in Force – Retirees and Dependents**

<b>Age</b>	<b>Total</b>	<b>100% Paid</b>	<b>75% Paid</b>	<b>50% Paid</b>	<b>25% Paid</b>	<b>0% Paid</b>
Single; Pre-Medicare	7,313	6,157	274	231	112	539
Family; Pre-Medicare	612	593	8	5	4	2
Parent Plus; Pre-Medicare	443	379	7	8	4	45
Couple; Pre-Medicare	850	785	27	18	16	4
Medicare Regular	1,932	73	218	440	419	782
Medicare High Option	<u>11,437</u>	<u>6,473</u>	<u>1,563</u>	<u>1,112</u>	<u>563</u>	<u>1,726</u>
Total	22,587	14,460	2,097	1,814	1,118	3,098

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT III – Hazardous**

**Supplementary Information Required by the GASB**

<b>Valuation date</b>	June 30, 2004
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Level percent of salary
<b>Remaining amortization period</b>	16 to 30 years
<b>Asset valuation method</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

**Actuarial assumptions:**

Investment rate of return	8.25%
Payroll growth	5.00%

**Plan membership:**

Retired participants and beneficiaries receiving benefits	1,549
Terminated members entitled to, but not yet receiving benefits	260
Active members	<u>4,014</u>
Total	5,823

**Contracts in Force – Retirees and Dependents**

<b>Age</b>	<b>Total</b>	<b>100% Paid</b>	<b>75% Paid</b>	<b>50% Paid</b>	<b>25% Paid</b>	<b>0% Paid</b>
Single; Pre-Medicare	502	384	49	54	12	3
Family; Pre-Medicare	114	108	4	1	1	0
Parent Plus; Pre-Medicare	65	55	3	3	4	0
Couple; Pre-Medicare	162	143	10	6	2	1
Medicare Regular	65	9	10	30	16	0
Medicare High Option	<u>531</u>	<u>324</u>	<u>77</u>	<u>99</u>	<u>29</u>	<u>2</u>
Total	1,439	1,023	153	193	64	6

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**EXHIBIT IV**

**Actuarial Assumptions and Actuarial Cost Method**

**Mortality Rates:**

*Healthy:* 1983 Group Annuity Mortality Table\*

*Disabled:* Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security

\* Rates increased by 0.05% for hazardous plan active members.

**Termination Rates before Retirement:**

Age	Non-Hazardous				Hazardous			
	Mortality		Rate (%)		Mortality		Rate (%)	
	Male	Female	Disability	Withdrawal*	Male	Female	Disability	Withdrawal**
20	0.04	0.02	0.03	2.40	0.09	0.07	0.04	3.04
25	0.05	0.03	0.03	2.40	0.10	0.08	0.04	3.04
30	0.06	0.03	0.04	2.40	0.11	0.08	0.05	3.38
35	0.09	0.05	0.06	2.40	0.14	0.10	0.07	2.44
40	0.12	0.07	0.10	2.00	0.17	0.12	0.13	1.50
45	0.22	0.10	0.21	1.80	0.27	0.15	0.26	0.75
50	0.39	0.16	0.42	1.60	0.44	0.21	0.53	0.00
55	0.61	0.25	0.79	1.20	0.66	0.30	0.99	0.00
60	0.92	0.42	1.39	0.20	0.97	0.47	1.74	0.00

\*Withdrawal rates during the first five years of employment are 35%, 10%, 7%, 5%, and 4% for non-hazardous plan members.

\*\*Withdrawal rates during the first five years of employment are 30%, 8%, 4%, 4%, and 4% for hazardous plan members.

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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<b>Non-Hazardous Retirement Rates:</b>	<b>Age</b>	<b>Retirement Probability*</b>
	55-57	0.04
	58-59	0.05
	60-61	0.06
	62	0.25
	63-64	0.10
	65	0.50
	66-67	0.20
	68	0.25
	69	0.40
	70 and older	1.00

\*Retirement probability is 0.25 at first age member is eligible for unreduced retirement benefits.

<b>Hazardous Retirement Rates:</b>	50% will retire as soon as eligible for unreduced benefit and balance will continue until age 60.
<b>Non-Hazardous Retirement Age for Inactive Vested Participants:</b>	65
<b>Hazardous Retirement Age for Inactive Vested Participants:</b>	55
<b>Percent Married:</b>	100%
<b>Age of Spouse:</b>	Females 3 years younger than males.
<b>Dependent Children:</b>	For a hazardous employee's duty-related death benefits, it is assumed that the employee is survived by two dependent children each age 6.
<b>Net Investment Return:</b>	8.25%

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

**Salary Increases:**

<b>Years of Service</b>	<b>Rate (%)</b>
1	12.00
2	10.00
3	8.00
4 or more	6.50

**Payroll Growth:**

5.0%

**Retiree Medical Insurance Election:**

Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

**Monthly Contribution Rates:**

**Pre-Medicare Coverage  
Rate in Effect on Valuation Date**

	<b>Single</b>	<b>Family</b>	<b>Parent Plus</b>	<b>Couple</b>
Region 1	\$288.36	\$648.88	\$389.32	\$584.00
Region 2	312.00	702.00	421.20	631.80
Region 3	436.00	981.20	588.72	883.08
Region 4	286.16	643.92	386.36	579.52

**Medicare Rate**

**Contracts in Force**

<b>Carrier</b>	<b>Low Option</b>	<b>High Option</b>	<b>Low Option</b>	<b>High Option</b>
Anthem Blue Seniors	\$110.00	\$315.44	3,898	23,013
Bankers Life Medicare	82.70	195.35	913	618

**Weighted Medicare Coverage  
Rate in Effect on Valuation Date**

	<b>Low Option</b>	<b>High Option</b>
All Members	\$104.82	\$312.30

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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<b>Medical Contribution Rate Increases:</b>	<b><u>Year</u></b>	<b><u>Rate(%)</u></b>
	2004-2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	7.00

**Members with Multiple Service Records:** For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

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<b>Non-Hazardous Administrative Expenses:</b>	\$5,300,000
<b>Hazardous Administrative Expenses:</b>	\$400,000

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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**Actuarial Value of Assets:** Market value of assets less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

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**Actuarial Cost Method:** Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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**EXHIBIT V**

**Summary of Plan Provisions**

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This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

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**Plan Year:** July 1 through June 30

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**Non-Hazardous Normal Retirement:**

*Age Requirement* 65

*Service Requirement* None

*Amount* If a member has at least 48 months of service, the monthly benefit is 1.97% times final average compensation times years of service. For member who were participants in any one of the state retirement systems from January 1, 1998 through January 1, 1999, the benefit factors is 2.00%. For these members who retire between January 1, 1999 and January 31, 2009 with at least 240 months of service, the benefit factor is 2.20%

Final compensation is the average salary during the five highest paid fiscal years. If the months of service credit during the highest five-year period is less than forty-eight, one or more additional fiscal years shall be used. For a non-hazardous member whose effective retirement date is between August 1, 2001 and January 1, 2009, and whose total service credit is at least 27 years and whose age and years of service total at least 75, final compensation is based on three years rather than five years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used.

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

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### Hazardous Normal Retirement:

<i>Age Requirement</i>	55
<i>Service Requirement</i>	None
<i>Amount</i>	<p>If a member has at least 60 months of service, the monthly benefit is 2.49% times final average compensation time years of service.</p> <p>Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used.</p> <p>If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.</p>

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### Non-Hazardous Early Retirement:

<i>Requirement</i>	Age 55 with 60 months service or any age with 25 years service.
<i>Amount</i>	Normal retirement benefit reduced by 5% per year for the first five years and 4% per year for the next five years for each year the member is younger than age 65 or has less than 27 years service, whichever is smaller.

### Hazardous Early Retirement:

<i>Requirement</i>	Age 50 with 15 years of service or any age with 20 years service.
<i>Amount</i>	Normal retirement benefit reduced by 5.5% per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

---

### Non-Hazardous Disability:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit except that service credit will be added to total service for the period from the last day of paid employment to the member's 65 <sup>th</sup> birthday or until the combined total service as of the last day of paid employment and added service equals 25 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For members with at least 25 years of service but less than 27 years service, total service shall be 27

**SECTION 4: Reporting Information for the Kentucky Employees Retirement System**

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years. For employees with 27 or more years of service credit, actual service will be used.

A contributing member in a non-hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of the member's final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

**Hazardous Disability:**

*Age Requirement*

None

*Service Requirement*

60 months

*Amount*

Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's 55<sup>th</sup> birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 or more years of service credit, actual service credit will be used.

A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

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**Vesting:**

*Age Requirement*

None

*Service Requirement*

60 months

*Amount*

Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.

*Normal Retirement Age*

65 for non-hazardous members and 55 for hazardous members.

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

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### **Pre-Retirement Death Benefit (not in line of duty):**

<i>Requirement</i>	Any age with 60 months service or age 65 with 48 months service.
<i>Amount</i>	Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

### **Spouse's Pre-Retirement Death Benefit (in line of duty):**

<i>Requirement</i>	None
<i>Amount</i>	The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.

### **Dependent Non-Spouse's Death Benefit (in line of duty) – Hazardous Plan:**

<i>Requirement</i>	None
<i>Amount</i>	The non-spouse may choose (1) a \$10,000 lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

### **Dependent Child's Death Benefit (in line of duty):**

<i>Requirement</i>	None
<i>Amount</i>	10% of member's final monthly rate of pay up to a maximum of 40%.

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### **Post-Retirement Death Benefit:**

<i>Lump-sum Benefit</i>	\$5,000
<i>Husband and Wife</i>	The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

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### **Insurance Plan for Retirees:**

The Retirement System pays a portion of medical premiums for retirees, and in the case of hazardous duty retirees, their dependents and beneficiaries. The Insurance Fund will pay 0%, 25%, 50%, 75%, or 100% of the premiums depending on retiree eligibility as reported by the System.

**County Employees Retirement System**

*Actuarial Valuation and Review  
as of June 30, 2004*

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*November 11, 2004*

*Board of Trustees  
County Employees Retirement System  
Perimeter Park West  
1260 Louisville Road  
Frankfort, Kentucky 40601-6124*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of June 30, 2004. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2005 and analyzes the preceding year's experience.*

*The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.*

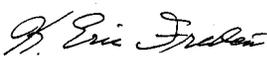
*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.*

*We look forward to reviewing this report at your next meeting and to answering any questions.*

*Sincerely,*

*THE SEGAL COMPANY*

By:   
*Leon F. (Rocky) Joyner, Jr., ASA, MAAA  
Vice President and Actuary*

  
*K. Eric Fredén, FSA, MAAA  
Associate Actuary*



## SECTION 1

### VALUATION SUMMARY

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## **SECTION 1: Valuation Summary for the County Employees Retirement System**

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### **Purpose**

This report has been prepared by The Segal Company to present a valuation of the County Employees Retirement System as of June 30, 2004. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2004, provided by the Board;
- The assets of the Plan as of June 30, 2004, provided by the Auditor;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### **Significant Issues in Valuation Year**

The following key findings were the result of this actuarial valuation:

- The County Employees Retirement System's basic financial goal is to establish contributions which fully fund the System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
- The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30-year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
- The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior year's rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016.
- The rates calculated in this report may be adopted by the Board for July 1, 2005 through June 30, 2006.

**SECTION 1: Valuation Summary for the County Employees Retirement System**

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- The following summarizes the required contributions for the year beginning July 1, 2005 and compares them to the prior valuation amounts.

**Non-Hazardous**

<u>Plan</u>	<u>July 1, 2005 Rate</u>	<u>July 1, 2004 Rate</u>
Retirement	4.55%	2.82%
Insurance	<u>6.43</u>	<u>5.66</u>
Total	10.98%	8.48%

**Hazardous**

<u>Plan</u>	<u>July 1, 2005 Rate</u>	<u>July 1, 2004 Rate</u>
Retirement	11.22%	9.31%
Insurance	<u>13.79</u>	<u>12.77</u>
Total	25.01%	22.08%

- The increase in the total rate is due to:

**Non-Hazardous**

Retirement plan investment loss	1.13%
Retiree COLA	0.10
Insurance Phase-in*	0.77
Change in administrative expense assumption	0.03
Other experience	<u>0.47</u>
Total change	2.50%

**Hazardous**

Retirement plan investment loss	1.41%
Retiree COLA	0.17
Insurance Phase-in*	1.02
Other experience	<u>0.33</u>
Total change	2.93%

\* Includes a portion of all insurance plan gains and losses for the year.

**SECTION 1: Valuation Summary for the County Employees Retirement System**

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- The actuarial valuation report as of June 30, 2004 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan. Because the actuarial value of assets involves a smoothing method, changes in market value are not fully reflected immediately in the actuarial value of assets. Rather, that effect is spread over a period of years.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2004 are:

**Non-Hazardous**

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2004</u>	<u>Actuarial value as a percentage of market value</u>
Retirement	\$574,515,573	112.5%
Insurance	21,521,478	103.8

**Hazardous**

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2004</u>	<u>Actuarial value as a percentage of market value</u>
Retirement	\$152,600,570	111.7%
Insurance	12,843,876	104.3

These investment losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.25% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.25% rate and all other actuarial assumption are met, the contribution requirements would still increase in each of the next few years.

**SECTION 1: Valuation Summary for the County Employees Retirement System**

**Summary of Key Valuation Results**

	<u>County Non-Hazardous</u>		<u>County Hazardous</u>		<u>County Totals</u>	
	June 30, 2004	June 30, 2003	June 30, 2004	June 30, 2003	June 30, 2004	June 30, 2003
<b>Contributions for next fiscal year:</b>						
Retirement	4.55%	2.82%	11.22%	9.31%	N/A	N/A
Insurance	<u>6.43</u>	<u>5.66</u>	<u>13.79</u>	<u>12.77</u>	<u>N/A</u>	<u>N/A</u>
Total	10.98%	8.48%	25.01%	22.08%	N/A	N/A
<b>Funded status as of valuation date:</b>						
<u>Retirement</u>						
Actuarial accrued liability	\$4,936,459,488	\$4,417,597,802	\$1,640,830,120	\$1,499,628,782	\$6,577,289,608	\$5,917,226,584
Actuarial value of assets	5,187,851,530	5,286,580,047	1,457,612,042	1,467,004,856	6,645,463,572	6,753,584,903
Funded ratio on actuarial value of assets	105.09%	119.67%	88.83%	97.82%	101.04%	114.13%
Market value of assets	\$4,613,335,957	\$4,174,881,117	\$1,305,011,472	\$1,168,794,472	5,918,347,429	5,343,675,589
Funded ratio on market value of assets	93.45%	94.51%	79.53%	77.94%	89.98%	90.31%
<u>Insurance</u>						
Actuarial accrued liability	\$2,438,734,696	\$2,176,963,259	\$1,025,684,477	\$935,650,662	\$3,464,419,173	\$3,112,613,921
Actuarial value of assets	585,399,072	520,060,105	310,578,162	269,190,080	895,977,234	789,250,185
Funded ratio on actuarial value of assets	24.00%	23.89%	30.28%	28.77%	25.86%	25.36%
Market value of assets	\$563,877,594	\$435,667,125	\$297,734,286	\$223,212,339	861,611,880	658,879,464
Funded ratio on market value of assets	23.12%	20.01%	29.03%	23.86%	24.87%	21.17%
<b>Demographic data as of valuation date:</b>						
Number of retired participants and beneficiaries	29,129	27,092	4,005	3,737	33,134	30,829
Number of vested former members	6,927	4,692	361	165	7,288	4,857
Number of former members due a refund	37,492	27,634	1,287	616	38,779	28,250
Number of active members	80,922	82,288	9,349	9,286	90,271	91,574
Total salary	\$1,826,870,880	\$1,796,451,180	\$392,562,624	\$374,700,732	\$2,219,433,504	\$2,171,151,912
Average salary	22,576	21,831	41,990	40,351	24,586	23,709

## SECTION 2: Valuation Results for the County Employees Retirement System

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### A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, C, and D.

The ratio of non-actives to actives has slowly but steadily climbed in both groups for the past decade. As the number of annuitants per active employee rises, cash flow is impacted. The system either becomes more dependent on investment income to cover benefit payments, or contributions must rise to meet these obligations. (For the two retirement plans, contributions have been less than benefit payments for five consecutive years.)

#### Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's non-hazardous valuation, there were 80,922 active members with an average age of 44.8, average service of 7.9 years and average salaries of \$22,576. The 82,288 active members in the prior valuation had an average age of 43.8, average service of 7.6 years and average salaries of \$21,831.

In the hazardous plan, there were 9,349 active members with an average age of 38.1, average service of 8.1 years and average salaries of \$41,990. The 9,286 active members in the prior valuation had an average age of 37.3, average service of 7.8 years and average salaries of \$40,351.

#### Inactive Members

In this year's valuation, there were 6,927 non-hazardous members with a vested right to a deferred or immediate vested benefit. In addition, there were 37,492 members entitled to a return of their employee contributions.

For the hazardous plan, there were 361 members with a vested right to a deferred or immediate vested benefit. In addition, there were 1,287 members entitled to a return of their employee contributions.

#### Retired Participants and Beneficiaries

As of June 30, 2004, 26,075 non-hazardous retired participants and 3,054 beneficiaries were receiving total monthly benefits of \$20,627,857. For comparison, in the previous valuation, there were 24,121 retired participants and 2,971 beneficiaries receiving monthly benefits of \$18,320,686.

For the hazardous plan, there were 3,514 retired participants and 491 beneficiaries were receiving total monthly benefits of \$6,629,934. For comparison, in the previous valuation, there were 3,235 retired participants and 502 beneficiaries receiving monthly benefits of \$6,026,847.

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**SECTION 2: Valuation Results for the County Employees Retirement System**

*A historical perspective of how the member population has changed over the past nine valuations can be seen in these charts.*

**CHART 1A – Non-Hazardous  
Member Population: 1996 – 2004**

<b>Year Ended June 30</b>	<b>Active Members</b>	<b>Vested Terminated Members*</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
1996	66,273	2,254	16,208	0.28
1997	69,219	2,503	17,797	0.29
1998	71,426	2,839	18,976	0.31
1999	74,151	3,238	20,687	0.32
2000	77,419	3,500	22,708	0.34
2001	78,773	4,080	24,415	0.36
2002	79,850	4,470	26,147	0.38
2003	82,288	4,692	27,092	0.39
2004	80,922	6,927	29,129	0.45

**CHART 1B – Hazardous  
Member Population: 1996 – 2004**

<b>Year Ended June 30</b>	<b>Active Members</b>	<b>Vested Terminated Members*</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
1996	6,281	85	1,961	0.33
1997	6,513	100	2,217	0.36
1998	6,800	117	2,392	0.37
1999	7,488	128	2,704	0.38
2000	7,951	112	2,984	0.39
2001	8,586	148	3,221	0.39
2002	8,949	148	3,483	0.41
2003	9,286	165	3,737	0.42
2004	9,349	361	4,005	0.47

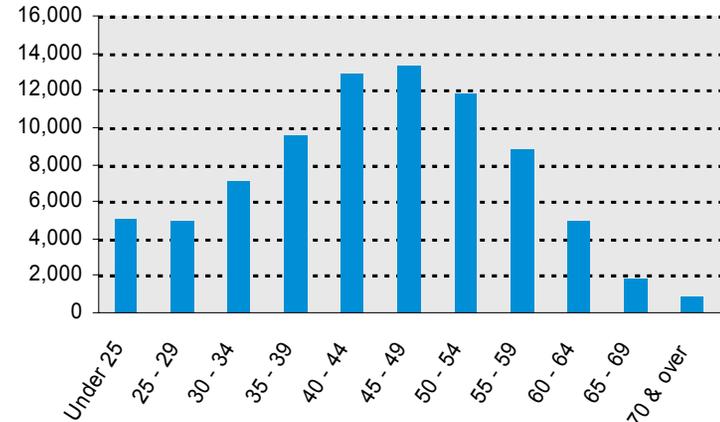
*\*Excludes terminated members due a refund of employee contributions.*

**SECTION 2: Valuation Results for the County Employees Retirement System**

*These graphs show a distribution of non-hazardous active members by age and by years of service.*

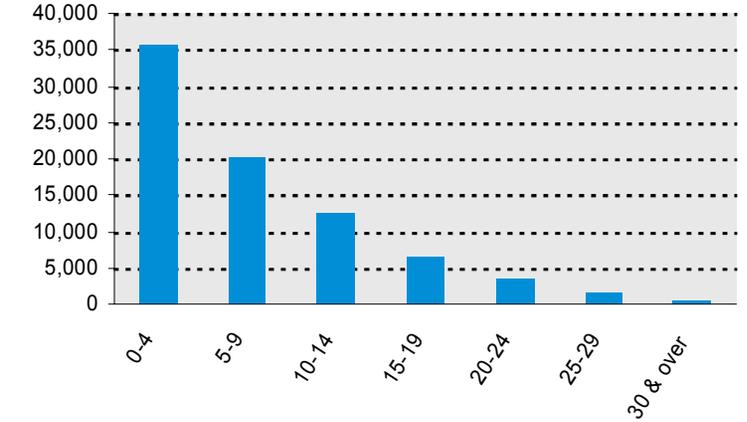
**CHART 2A – Non-Hazardous**

**Distribution of Active Members by Age as of June 30, 2004**



**CHART 3A – Non-Hazardous**

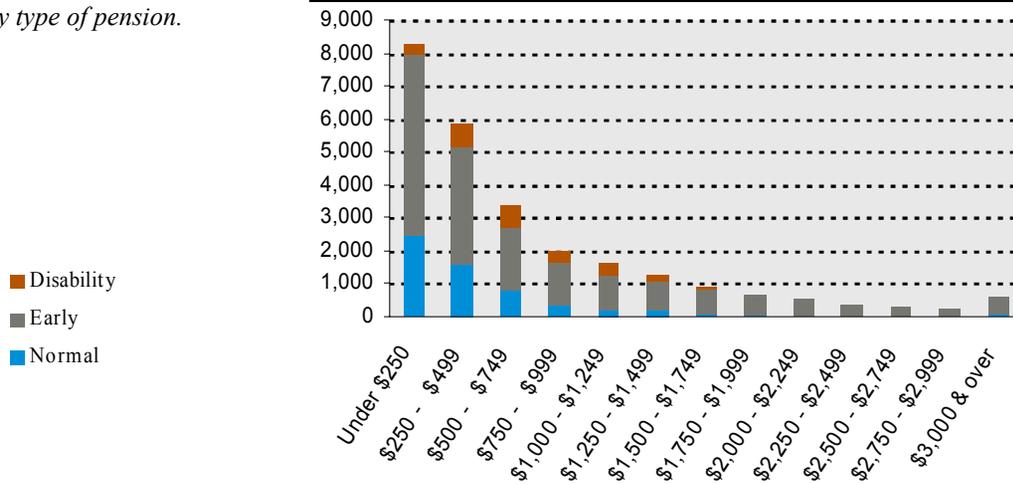
**Distribution of Active Members by Years of Service as of June 30, 2004**



*These graphs show a distribution of the current non-hazardous retired participants based on their monthly amount and age, by type of pension.*

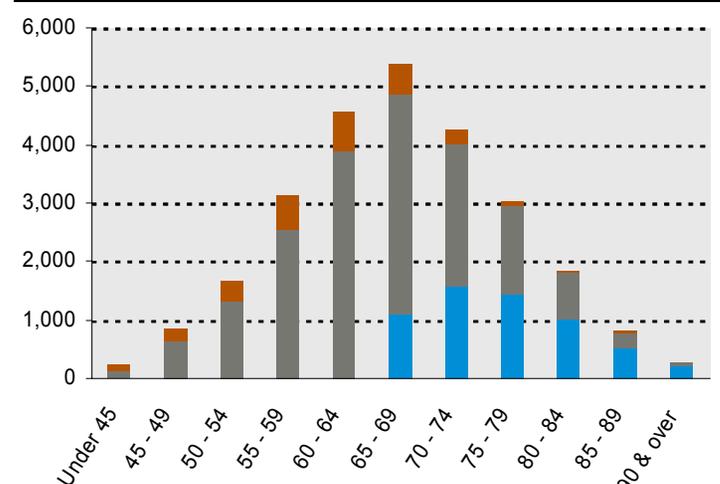
**CHART 4A – Non-Hazardous**

**Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2004**



**CHART 5A – Non-Hazardous**

**Distribution of Retired Participants by Type and by Age as of June 30, 2004**

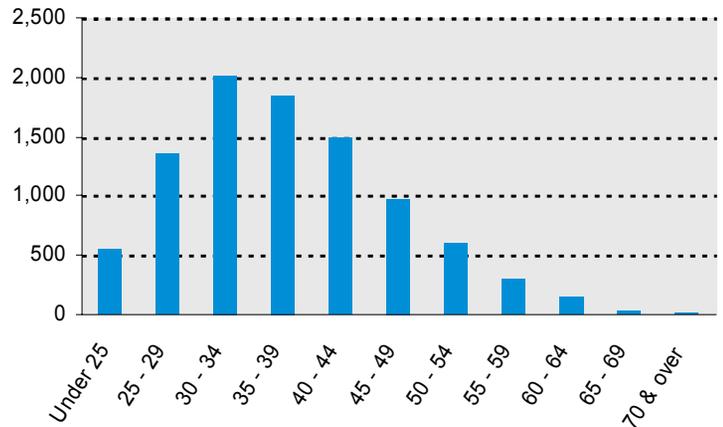


**SECTION 2: Valuation Results for the County Employees Retirement System**

*These graphs show a distribution of hazardous active members by age and by years of service.*

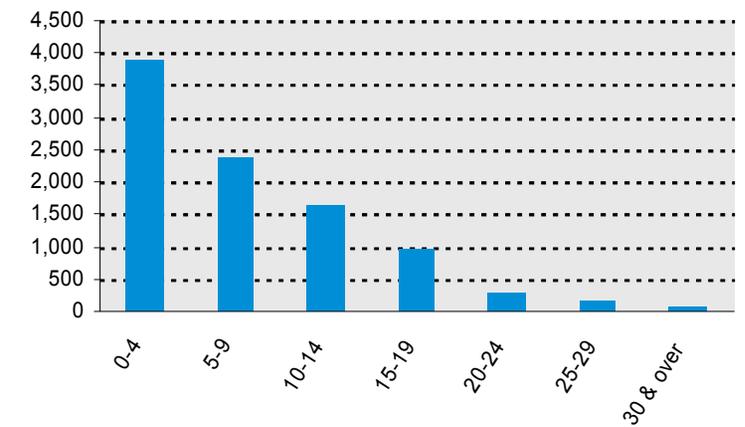
**CHART 2B – Hazardous**

**Distribution of Active Members by Age as of June 30, 2004**



**CHART 3B – Hazardous**

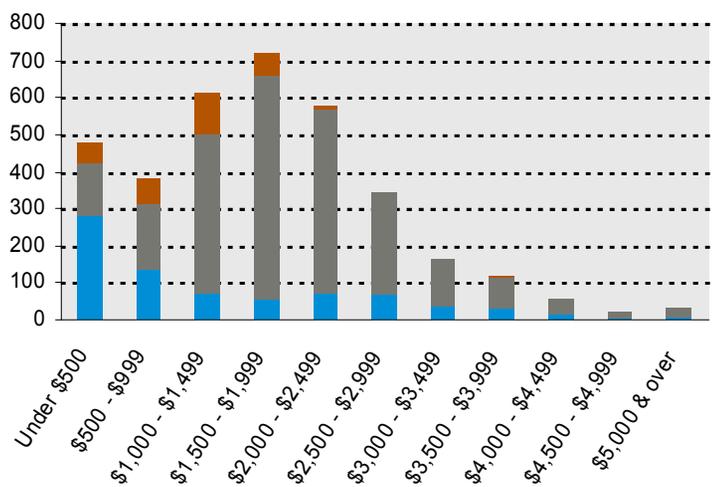
**Distribution of Active Members by Years of Service as of June 30, 2004**



*These graphs show a distribution of the current hazardous retired participants based on their monthly amount and age, by type of pension.*

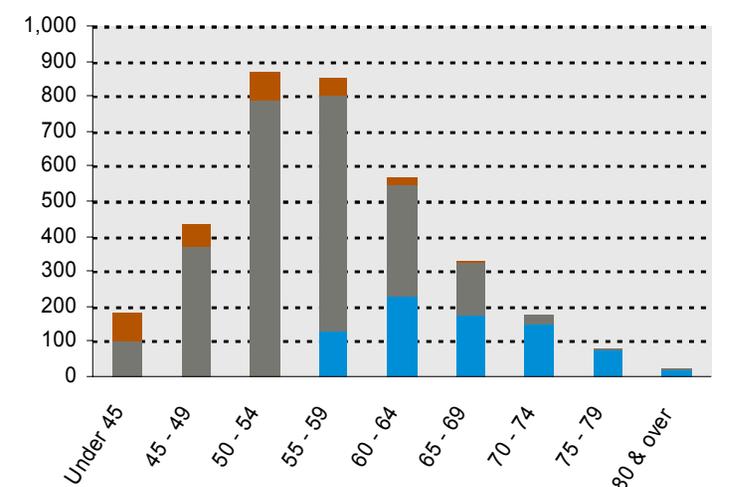
**CHART 4B – Hazardous**

**Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2004**



**CHART 5B – Hazardous**

**Distribution of Retired Participants by Type and by Age as of June 30, 2004**



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## SECTION 2: Valuation Results for the County Employees Retirement System

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### B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative and investment expenses) and net investment earnings (less common stock commissions and securities lending expense) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits E, F and G.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

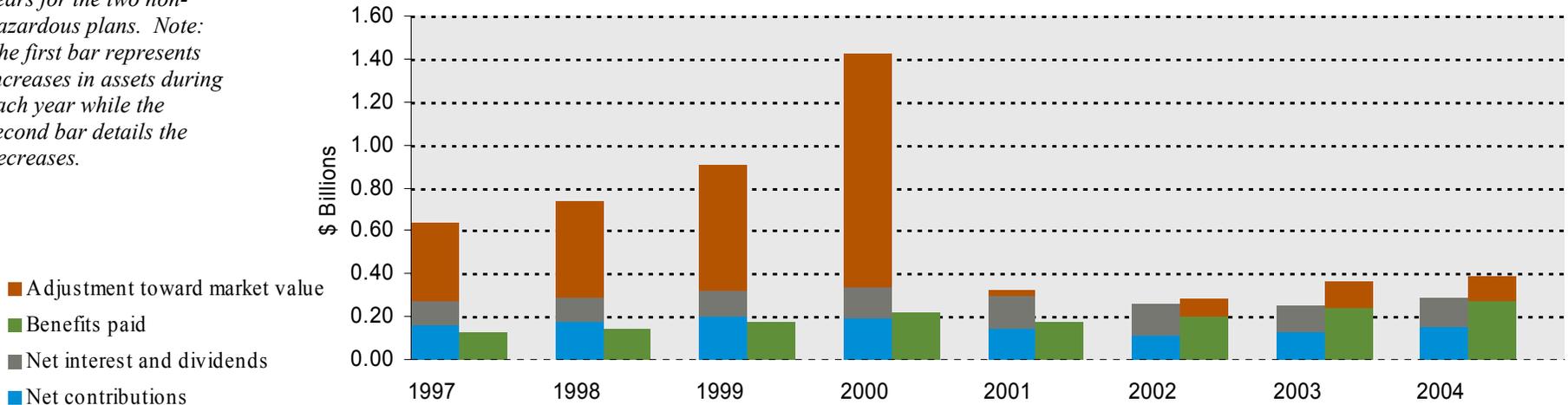
Both the actuarial value and market value of assets are representations of the System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

**SECTION 2: Valuation Results for the County Employees Retirement System**

*These charts depict the components of changes in the actuarial value of assets over the last eight years for the two non-hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

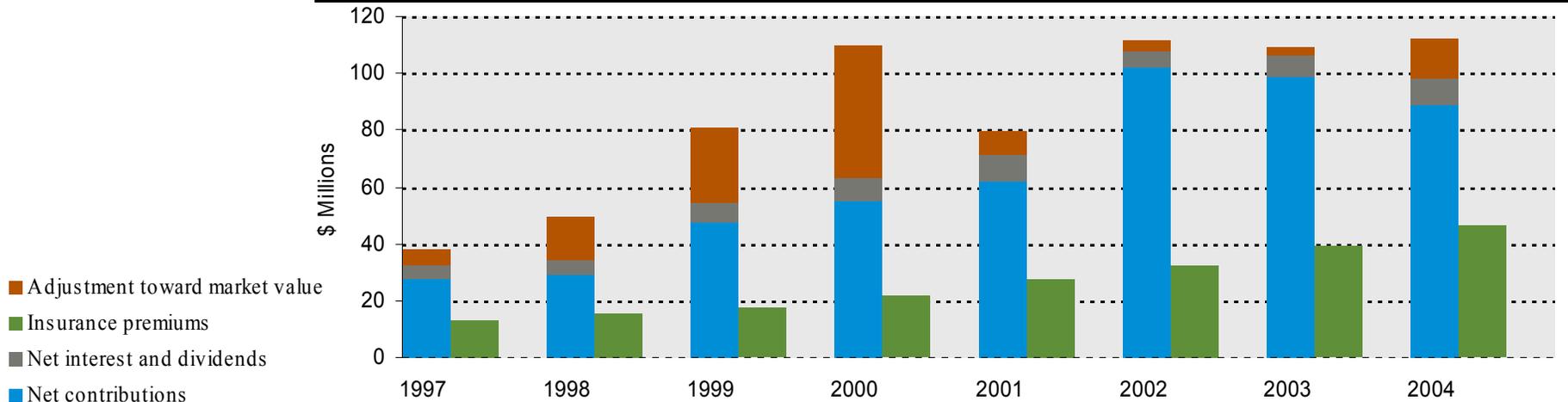
**CHART 6A – Non-Hazardous Retirement**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**



**CHART 6B – Non-Hazardous Insurance**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**

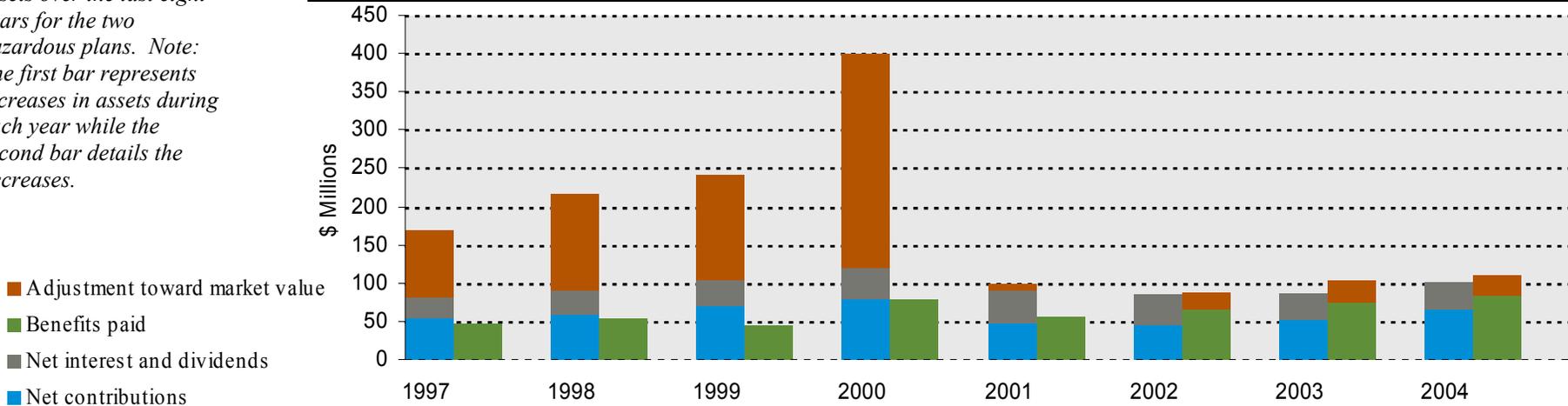


**SECTION 2: Valuation Results for the County Employees Retirement System**

*These charts depict the components of changes in the actuarial value of assets over the last eight years for the two hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

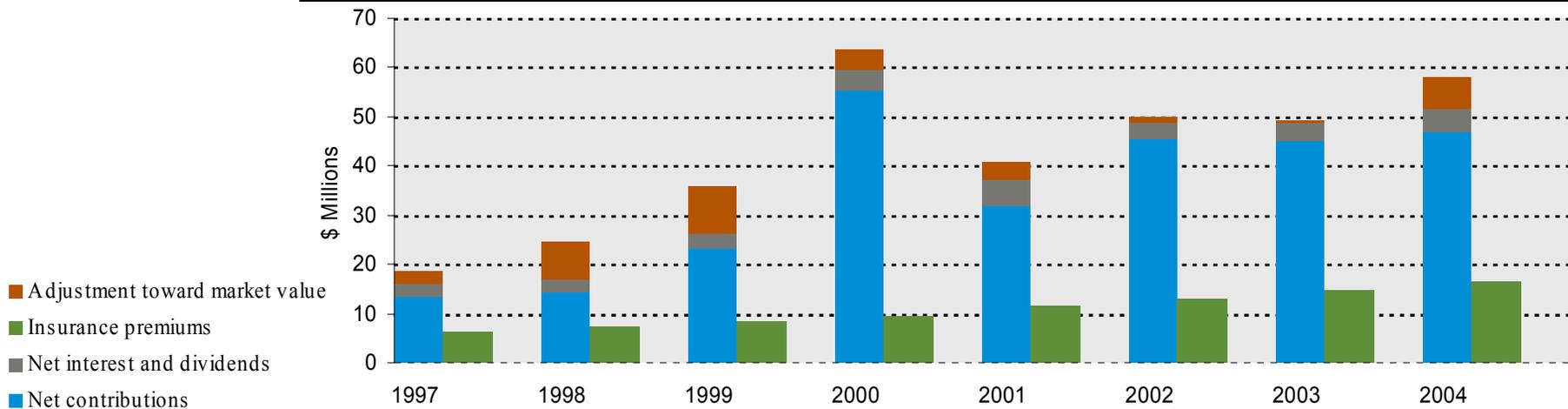
**CHART 6C – Hazardous Retirement**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**



**CHART 6D – Hazardous Insurance**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1997 – 2004**



## SECTION 2: Valuation Results for the County Employees Retirement System

These charts show the determination of the actuarial value of assets as of the valuation date.

### CHART 7A – Non-Hazardous Retirement

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

	Original		Unrecognized
1. Market value of assets			\$4,613,335,957
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$124,531,026	\$24,906,205	\$99,624,821
(b) Year ended June 30, 2003	-278,226,609	-55,645,322	-166,935,966
(c) Year ended June 30, 2002	-626,456,069	-125,291,214	-250,582,428
(d) Year ended June 30, 2001	-1,283,110,002	-256,622,000	<u>-256,622,000</u>
(e) Total unrecognized return			-574,515,573
3. Final actuarial value of assets: (1) – (2e)			<u>\$5,187,851,530</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			112.5%

### CHART 7B – Non-Hazardous Insurance

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

	Original		Unrecognized
1. Market value of assets			\$563,877,594
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$41,589,264	\$8,317,853	\$33,271,411
(b) Year ended June 30, 2003	-28,828,353	-5,765,671	-17,297,013
(c) Year ended June 30, 2002	-68,307,263	-13,661,453	-27,322,906
(d) Year ended June 30, 2001	-50,864,852	-10,172,970	<u>-10,172,970</u>
(e) Total unrecognized return			-21,521,478
3. Final actuarial value of assets: (1) – (2e)			<u>\$585,399,072</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			103.8%

\* Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

## SECTION 2: Valuation Results for the County Employees Retirement System

*These charts show the determination of the actuarial value of the assets as of the valuation date.*

### CHART 7C – Hazardous Retirement

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

1. Market value of assets			\$1,305,011,472
2. Unrecognized return*	Original Amount	Amortization	Unrecognized Return
(a) Year ended June 30, 2004	\$35,262,776	\$7,052,555	\$28,210,221
(b) Year ended June 30, 2003	-74,447,276	-14,889,455	-44,668,365
(c) Year ended June 30, 2002	-168,161,440	-33,632,288	-67,264,576
(d) Year ended June 30, 2001	-344,389,248	-68,877,850	-68,877,850
(e) Total unrecognized return			-152,600,570
3. Final actuarial value of assets: (1) – (2e)			<u>\$1,457,612,042</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			111.7%

### CHART 7D – Hazardous Insurance

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

1. Market value of assets			\$297,734,286
2. Unrecognized return*	Original Amount	Amortization	Unrecognized Return
(a) Year ended June 30, 2004	\$20,998,596	\$4,199,719	\$16,798,877
(b) Year ended June 30, 2003	-15,162,699	-3,032,540	-9,097,620
(c) Year ended June 30, 2002	-36,213,421	-7,242,684	-14,485,368
(d) Year ended June 30, 2001	-30,298,823	-6,059,765	-6,059,765
(e) Total unrecognized return			-12,843,876
3. Final actuarial value of assets: (1) – (2e)			<u>\$310,578,162</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			104.3%

\* Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

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**SECTION 2: Valuation Results for the County Employees Retirement System**

**CHART 8**

**Calculation of Unrecognized Return for the Year Ended June 30, 2004**

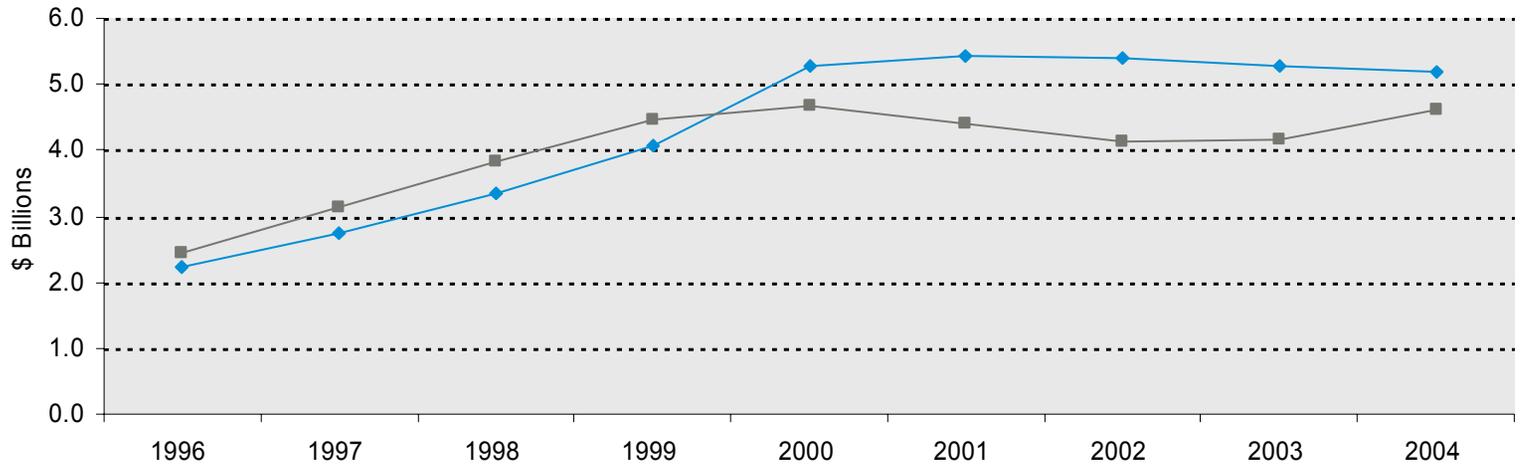
	<b>Non-Hazardous Retirement</b>	<b>Non-Hazardous Insurance</b>	<b>Hazardous Retirement</b>	<b>Hazardous Insurance</b>
1. Employer and member contributions	\$166,512,893	\$89,344,241	\$66,308,539	\$47,036,777
2. Benefit payments including refunds, or healthcare premiums	271,977,052	46,651,550	83,942,373	16,701,831
3. Administrative and investment expenses	11,913,070	708,301	1,644,607	260,354
4. Net cash flow: (1) - (2) - (3)	-117,377,229	41,984,390	-19,278,441	30,074,592
5. Market value of assets as of June 30, 2003	4,174,881,117	435,667,125	1,168,794,472	223,212,339
6. Market value of assets as of June 30, 2004	4,613,335,957	563,877,594	1,305,011,472	297,734,286
7. Actuarial value of assets as of June 30, 2003	5,286,580,047	520,060,105	1,467,004,856	269,190,080
8. Average actuarial value of assets: (7) + [0.5 x (4)]	5,227,891,433	541,052,300	1,457,365,636	284,227,376
9. Expected return on an actuarial basis: 8.25% of (8)	431,301,043	44,636,815	120,232,665	23,448,758
10. Gain/(loss) for the year ended June 30, 2004: (6) - (5) - (4) - (9)	124,531,026	41,589,264	35,262,776	20,998,596
11. Unrecognized return as of June 30, 2004: 80% of (10)	99,624,821	33,271,411	28,210,221	16,798,877

**SECTION 2: Valuation Results for the County Employees Retirement System**

*These charts show the change in the actuarial value of assets versus the market value over the past nine years for the non-hazardous plans.*

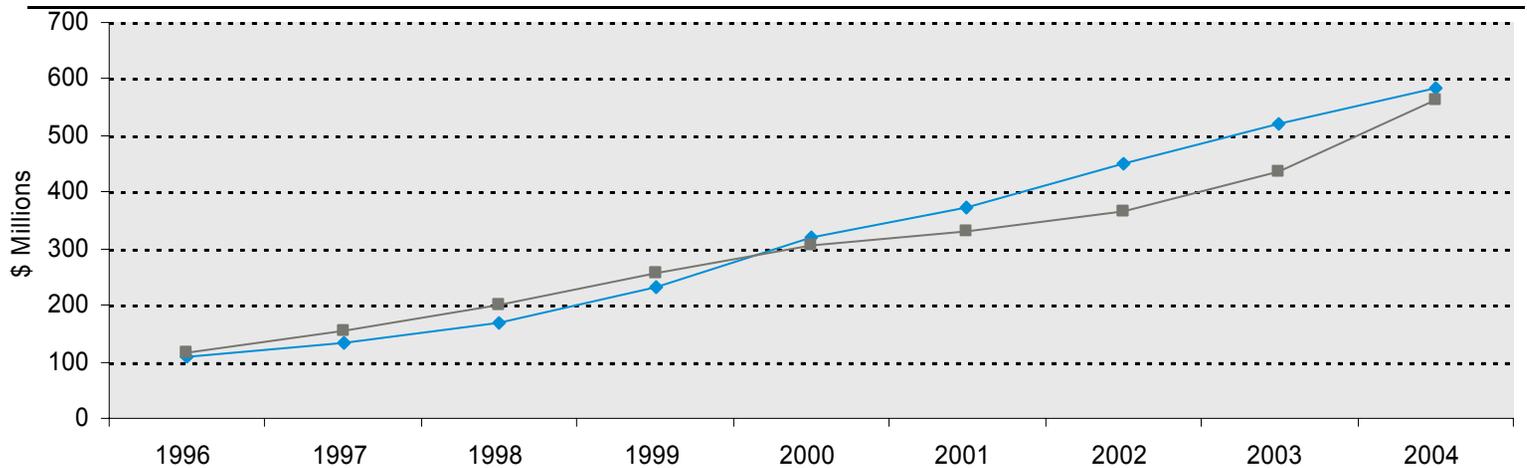
**CHART 9A – Non-Hazardous Retirement**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**



**CHART 9B – Non-Hazardous Insurance**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**

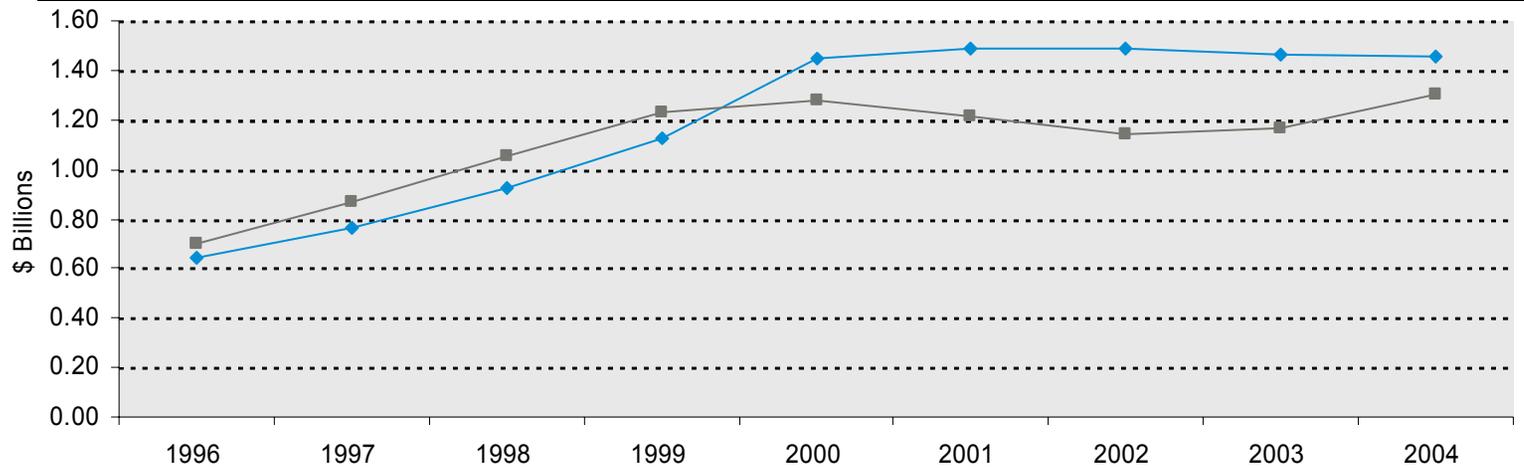


**SECTION 2: Valuation Results for the County Employees Retirement System**

*These charts show the change in the actuarial value of assets versus the market value over the past nine years for the hazardous plans.*

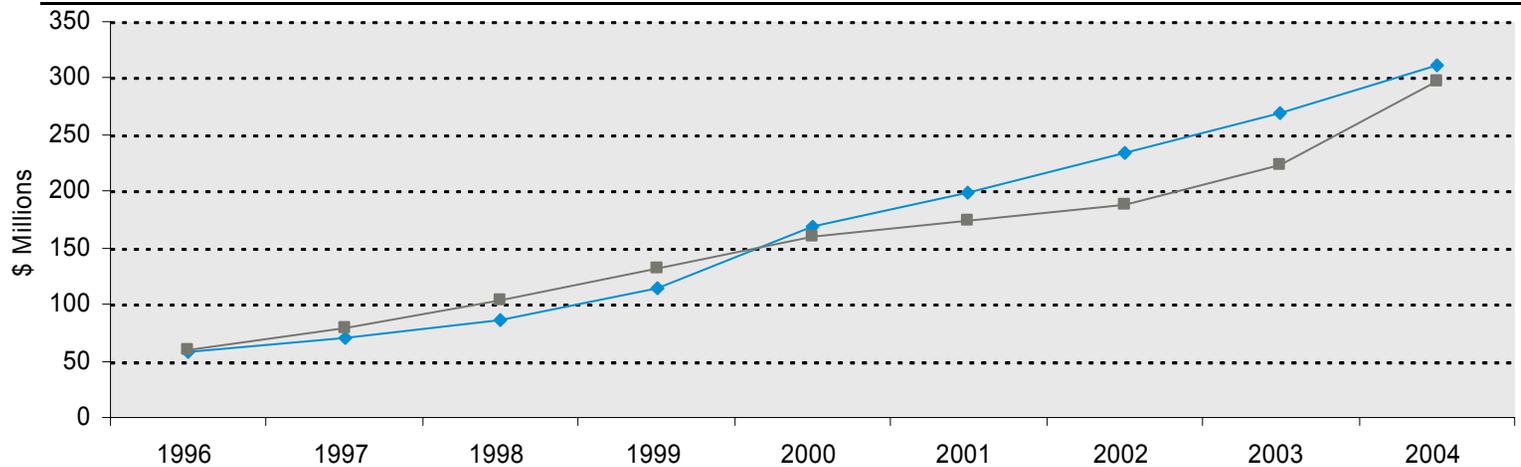
**CHART 9C – Hazardous Retirement**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**



**CHART 9D – Hazardous Insurance**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1996 – 2004**



**SECTION 2: Valuation Results for the County Employees Retirement System**

**C. ACTUARIAL EXPERIENCE**

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

Chart 10 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

*This chart provides a summary of the actuarial experience during the past year.*

**CHART 10**  
**Actuarial Experience for Year Ended June 30, 2004**

	<b>Non-Hazardous Retirement</b>	<b>Non-Hazardous Insurance</b>	<b>Hazardous Retirement</b>	<b>Hazardous Insurance</b>
1. Net gain/(loss) from investments*	-\$412,652,331	-\$21,282,238	-\$110,347,038	-\$12,135,268
2. Net gain/(loss) from administrative expenses	-643,319	-425,288	45,403	-113,182
3. Net gain/(loss) from other experience**	<u>-241,667,147</u>	<u>43,786,640</u>	<u>-39,600,718</u>	<u>30,259,146</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$654,962,797	\$22,079,114	-\$149,902,353	\$18,010,696

\* Details in Chart 11

\*\* Details in Chart 14

**SECTION 2: Valuation Results for the County Employees Retirement System**

**Investment Rate of Return**

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the System’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. Chart 11 shows the net investment experience for each plan for the year.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 12, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years.

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2004 with regard to its investments.

**CHART 11**

**Actuarial Value Investment Experience for Year Ended June 30, 2004**

*This chart shows the gain/(loss) due to investment experience.*

	<b>Non-Hazardous Retirement</b>	<b>Non-Hazardous Insurance</b>	<b>Hazardous Retirement</b>	<b>Hazardous Insurance</b>
1. Actual return	\$18,648,712	\$23,354,577	\$9,885,627	\$11,313,490
2. Average value of assets	5,227,891,433	541,052,300	1,457,365,636	284,227,376
3. Actual rate of return: (1) ÷ (2)	0.36%	4.32%	0.68%	3.98%
4. Assumed rate of return	8.25%	8.25%	8.25%	8.25%
5. Expected return: (2) x (4)	\$431,301,043	\$44,636,815	\$120,232,665	\$23,448,758
6. Actuarial gain/(loss): (1) – (5)	<u>-\$412,652,331</u>	<u>-\$21,282,238</u>	<u>-\$110,347,038</u>	<u>-\$12,135,268</u>

**SECTION 2: Valuation Results for the County Employees Retirement System**

**CHART 12A – Non-Hazardous Retirement**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$111,947,000	4.96%	\$362,703,525	16.07%	\$474,650,525	21.03%	\$639,522,469	25.88%
1998	113,937,000	4.12	448,646,445	16.21	562,583,445	20.33	673,873,449	21.42
1999	120,509,000	3.59	582,815,432	17.36	703,324,432	20.95	614,212,590	15.96
2000	143,530,000	3.53	1,086,361,099	26.74	1,229,891,099	30.27	217,824,204	4.88
2001	155,881,000	2.96	20,266,015	0.38	176,147,015	3.35	-239,461,644	-5.14
2002	141,791,936	2.64	-79,867,632	-1.48	61,924,304	1.15	-185,461,064	-4.26
2003	124,381,363	2.33	-121,335,398	-2.27	3,045,965	0.06	162,377,892	3.99
2004	<u>130,892,445</u>	2.50	<u>-112,243,733</u>	-2.15	<u>18,648,712</u>	0.36	<u>555,832,069</u>	13.50
Total	\$1,042,869,744		\$2,187,345,753		\$3,230,215,497		\$2,438,719,965	
					Average return	9.60%		7.84%

**CHART 12B – Non-Hazardous Insurance**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$5,015,000	4.28%	\$5,487,235	4.68%	\$10,502,235	8.96%	\$25,350,581	20.85%
1998	5,373,000	3.80	14,824,200	10.48	20,197,200	14.27	32,898,822	20.46
1999	6,294,000	3.43	26,753,873	14.56	33,047,873	17.99	26,461,016	12.27
2000	7,965,000	3.21	46,582,525	18.74	54,547,525	21.95	17,083,861	6.24
2001	9,332,000	2.77	8,274,934	2.46	17,606,934	5.23	-10,987,582	-3.38
2002	6,286,566	1.55	3,397,597	0.84	9,684,163	2.38	-34,930,434	-9.55
2003	7,217,788	1.50	2,804,204	0.58	10,021,992	2.09	10,793,733	2.73
2004	<u>9,549,993</u>	1.77	<u>13,804,584</u>	2.55	<u>23,354,577</u>	4.32	<u>86,226,079</u>	18.88
Total	\$57,033,347		\$121,929,151		\$178,962,498		\$152,896,076	
					Average return	7.29%		6.61%

Note: Each year's yield is weighted by the average asset value in that year.

**SECTION 2: Valuation Results for the County Employees Retirement System**

**CHART 12C – Hazardous Retirement**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$28,023,000	4.34%	\$86,904,805	13.46%	\$114,927,805	17.80%	\$163,710,501	23.29%
1998	32,158,000	4.20	126,357,182	16.49	158,515,182	20.69	181,742,476	20.83
1999	33,560,000	3.57	137,945,547	14.67	171,505,547	18.24	143,494,373	13.42
2000	39,901,000	3.55	281,307,308	25.02	321,208,308	28.56	54,094,746	4.41
2001	42,810,000	2.97	8,670,222	0.60	51,480,222	3.57	-58,424,532	-4.58
2002	41,988,855	2.84	-22,692,628	-1.54	19,296,227	1.31	-47,103,145	-3.92
2003	34,987,251	2.37	-30,769,513	-2.09	4,217,738	0.29	47,170,054	4.16
2004	<u>36,316,694</u>	2.49	<u>-26,431,067</u>	-1.81	<u>9,885,627</u>	0.68	<u>155,495,441</u>	13.41
Total	\$289,744,800		\$561,291,856		\$851,036,656		\$640,179,914	
						Average return	9.13%	7.41%

**CHART 12D – Hazardous Insurance**

**Investment Return – Actuarial Value vs. Market Value: 1997 - 2004**

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1997	\$2,859,000	4.70%	\$2,621,301	4.31%	\$5,480,301	9.01%	\$13,209,665	20.98%
1998	2,757,000	3.77	7,753,398	10.59	10,510,398	14.36	17,100,114	20.59
1999	3,176,000	3.36	9,273,144	9.80	12,449,144	13.16	13,451,746	12.11
2000	4,270,000	3.11	4,232,689	3.08	8,502,689	6.19	-17,918,878	-11.57
2001	5,141,000	2.87	3,567,337	1.99	8,708,337	4.87	-6,560,963	-3.86
2002	3,234,643	1.51	1,126,092	0.53	4,360,735	2.04	-18,622,357	-9.81
2003	3,710,646	1.49	562,884	0.23	4,273,530	1.71	5,445,820	2.69
2004	<u>5,025,818</u>	1.77	<u>6,287,672</u>	2.21	<u>11,313,490</u>	3.98	<u>44,447,355</u>	18.66
Total	\$30,174,107		\$35,424,517		\$65,598,624		\$50,552,502	
						Average return	5.07%	4.17%

Note: Each year's yield is weighted by the average asset value in that year.

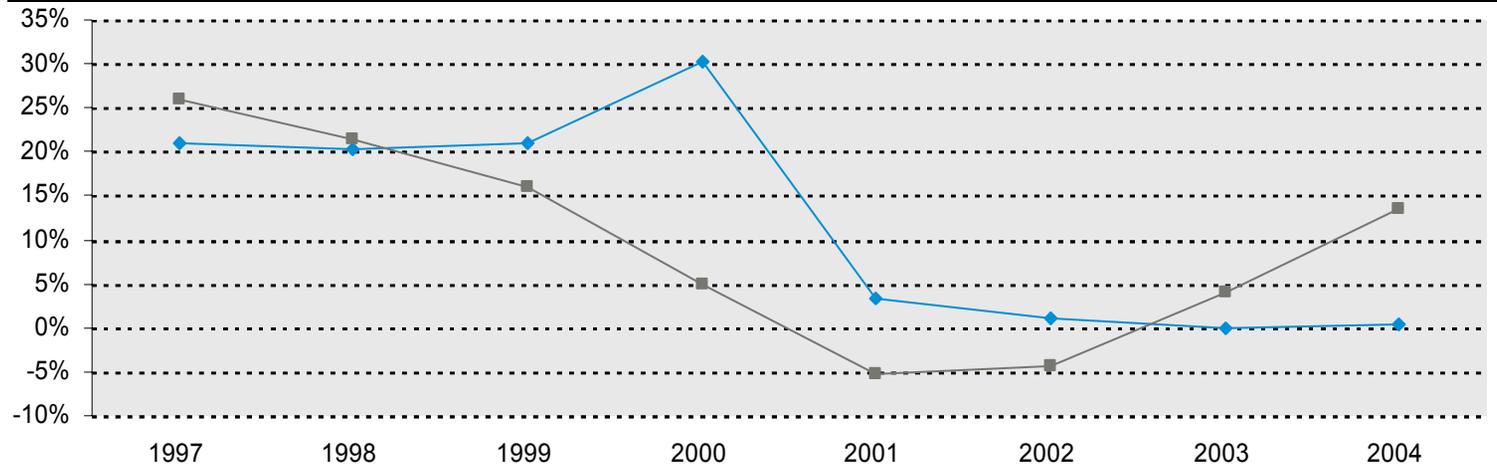
**SECTION 2: Valuation Results for the County Employees Retirement System**

*The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1997 - 2004 for the non-hazardous plans.*

◆ Actuarial Value  
■ Market Value

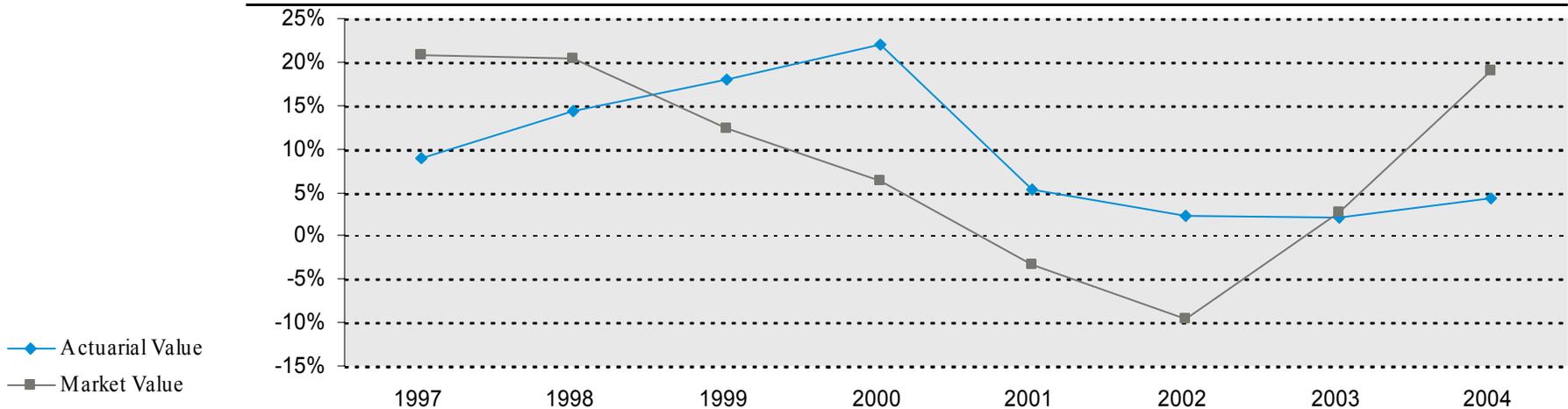
**CHART 13A – Non-Hazardous Retirement**

**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**



**CHART 13B – Non-Hazardous Insurance**

**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**



◆ Actuarial Value  
■ Market Value

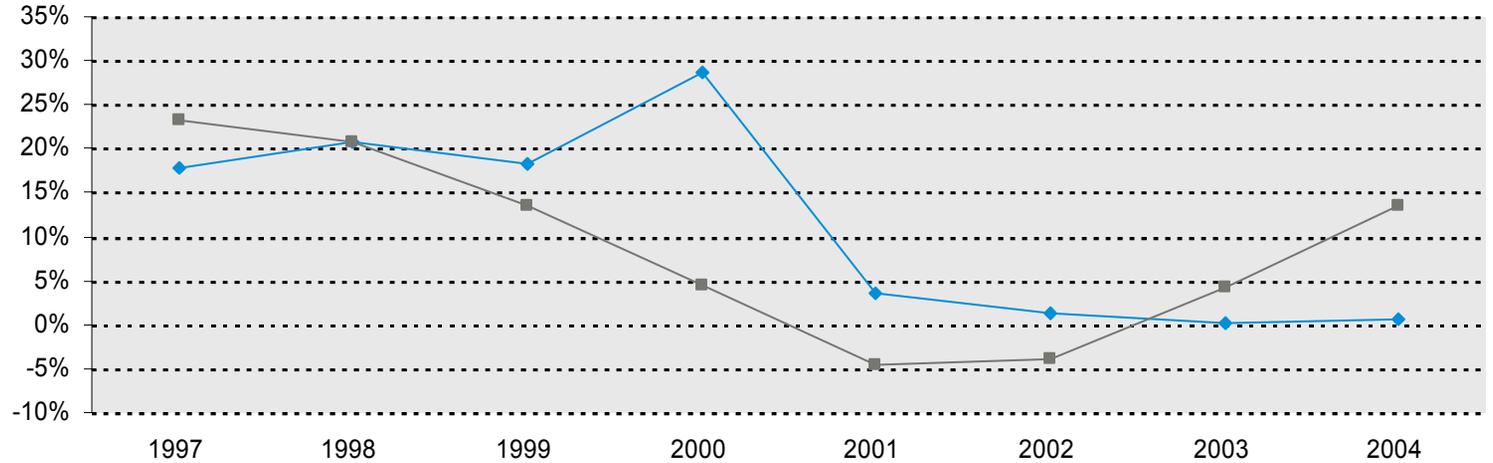
**SECTION 2: Valuation Results for the County Employees Retirement System**

*The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1997 – 2004 for the hazardous plans.*

◆ Actuarial Value  
 ■ Market Value

**CHART 13C – Hazardous Retirement**

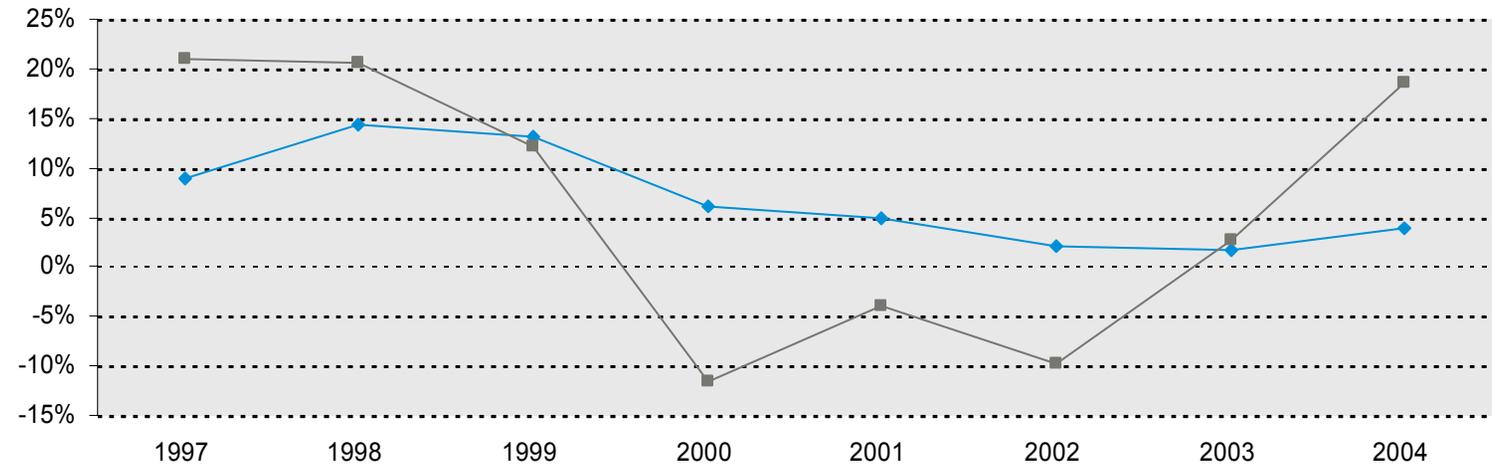
**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**



**CHART 13D – Hazardous Insurance**

**Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2004**

◆ Actuarial Value  
 ■ Market Value



**SECTION 2: Valuation Results for the County Employees Retirement System**

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**Administrative Expenses**

Current methodology includes an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

<u>Plan</u>	<u>Year End 2004 Assumption</u>	<u>Year End 2004 Actual Experience</u>	<u>Gain/(Loss)* for the Year</u>	<u>Year End 2005 Assumption</u>
Non-Hazardous Retirement	\$8,100,000	\$8,694,290	-\$643,319	\$8,700,000
Non-Hazardous Insurance	0	392,876	-425,288	0
Hazardous Retirement	800,000	758,057	45,403	800,000
Hazardous Insurance	0	104,556	-113,182	0

\* Includes interest to year-end.

**SECTION 2: Valuation Results for the County Employees Retirement System**

**Other Experience**

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- COLAs granted in the year,
- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),

- the number of disability retirements, and
- salary increases different than assumed.

A brief summary of the demographic gain/(loss) experience of the Funds for the year ended June 30, 2004 is shown in the chart below.

*The chart shows elements of the experience gain/(loss) for the most recent year.*

**CHART 14**  
**Experience Due to Changes in Demographics for Year Ended June 30, 2004**

	<b>Non-Hazardous Retirement</b>	<b>Non-Hazardous Insurance</b>	<b>Hazardous Retirement</b>	<b>Hazardous Insurance</b>
1. COLA	-\$37,631,532	N/A	-\$13,436,296	N/A
2. Other	<u>-204,035,615</u>	<u>\$43,786,640</u>	<u>-26,164,423</u>	<u>\$30,259,146</u>
3. Total	-\$241,667,147	\$43,786,640	-\$39,600,719	\$30,259,146
4. Percentage of actuarial accrued liability	4.9%	1.8%	2.4%	3.0%

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## **SECTION 2: Valuation Results for the County Employees Retirement System**

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### **D. RECOMMENDED CONTRIBUTION**

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30-year amortization of bases established each year as specified in the law governing the Plan.

Exhibit H in Section 3 provides details on these amortization bases.

The contribution rates as of June 30, 2004 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Charts 15 and 16 present the recommended contributions and reconciliations from the prior valuation.

**SECTION 2: Valuation Results for the County Employees Retirement System**

*This chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 15A – Non-Hazardous Retirement  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$187,730,598	10.28%	\$183,158,654	10.20%
2. Administrative expenses	8,700,000	0.47%	8,100,000	0.45%
3. Expected employee contributions	<u>-90,518,789</u>	<u>-4.95%</u>	<u>-88,681,304</u>	<u>-4.94%</u>
4. Employer normal cost: (1) + (2) + (3)	\$105,911,809	5.80%	\$102,577,350	5.71%
5. Actuarial accrued liability	4,936,459,488		4,417,597,802	
6. Actuarial value of assets	<u>5,187,851,530</u>		<u>5,286,580,047</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	-\$251,392,042		-\$868,982,245	
8. Payment on unfunded/(overfunded) actuarial accrued liability	-22,788,140	-1.25%	-51,909,585	-2.89%
9. Total recommended contribution: (4) + (8)	<u>\$83,123,669</u>	<u>4.55%</u>	<u>\$50,667,765</u>	<u>2.82%</u>
10. Projected salary	\$1,826,870,880		\$1,796,451,180	

*This chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

**CHART 16A – Non-Hazardous Retirement  
Reconciliation of Recommended Contribution from June 30, 2003 to June 30, 2004**

<b>Recommended Contribution as of June 30, 2003</b>	\$50,667,765
Effect of COLA for retirees	\$1,885,290
Effect of investment loss	20,673,334
Effect of change in administrative expense assumption	600,000
Effect of net other changes	<u>9,297,280</u>
<b>Total change</b>	<u>\$32,455,904</u>
<b>Recommended Contribution as of June 30, 2004</b>	\$83,123,669

**SECTION 2: Valuation Results for the County Employees Retirement System**

*The chart compares this valuation's recommended contributions with the prior valuation.*

**CHART 15B – Non-Hazardous Insurance  
Recommended Contribution**

	<b>As of June 30</b>			
	<b>2004</b>		<b>2003</b>	
	<b>Amount</b>	<b>% of Salary</b>	<b>Amount</b>	<b>% of Salary</b>
1. Employer normal cost	\$165,464,221	9.06%	\$161,192,881	8.97%
2. Actuarial accrued liability	2,438,734,696		2,176,963,259	
3. Actuarial value of assets	<u>585,399,072</u>		<u>520,060,105</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$1,853,335,624		\$1,656,903,154	
5. Payment on unfunded/(overfunded) actuarial accrued liability	107,478,536	5.88%	94,623,016	5.27%
6. Full EANC contribution: (1) + (5)	<u>\$272,942,757</u>	<u>14.94%</u>	<u>\$255,815,897</u>	<u>14.24%</u>
7. Projected salary	\$1,826,870,880		\$1,796,451,180	
8. Prior year's funding rate	N/A	5.66%	N/A	4.95%
9. Years to reach full EANC	N/A	12	N/A	13
10. Additional amount for current year	N/A	0.77%	N/A	0.71%
11. Total recommended contribution rate: (8) + (10)	N/A	6.43%	N/A	5.66%

**SECTION 2: Valuation Results for the County Employees Retirement System**

*This chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 15C – Hazardous Retirement  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$63,548,648	16.19%	\$60,890,782	16.25%
2. Administrative expenses	800,000	0.20%	800,000	0.21%
3. Expected employee contributions	<u>-29,803,612</u>	<u>-7.59%</u>	<u>-28,714,354</u>	<u>-7.66%</u>
4. Employer normal cost: (1) + (2) + (3)	\$34,545,036	8.80%	\$32,976,428	8.80%
5. Actuarial accrued liability	1,640,830,120		1,499,628,782	
6. Actuarial value of assets	<u>1,457,612,042</u>		<u>1,467,004,856</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	\$183,218,078		\$32,623,926	
8. Payment on unfunded/(overfunded) actuarial accrued liability	9,514,368	2.42%	1,905,978	0.51%
9. Total recommended contribution: (4) + (8)	<u>\$44,059,404</u>	<u>11.22%</u>	<u>\$34,882,406</u>	<u>9.31%</u>
10. Projected salary	\$392,562,624		\$374,700,732	

*This chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

**CHART 16C – Hazardous Retirement  
Reconciliation of Recommended Contribution from June 30, 2003 to June 30, 2004**

<b>Recommended Contribution as of June 30, 2003</b>	\$34,882,406
Effect of COLA for retirees	\$673,141
Effect of investment loss	5,528,240
Effect of net other changes	<u>2,975,617</u>
<b>Total change</b>	<u>\$9,176,998</u>
<b>Recommended Contribution as of June 30, 2004</b>	\$44,059,404

**SECTION 2: Valuation Results for the County Employees Retirement System**

*The chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 15D – Hazardous Insurance  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Employer normal cost	\$56,937,787	14.50%	\$55,855,272	14.91%
2. Actuarial accrued liability	1,025,684,477		935,650,662	
3. Actuarial value of assets	<u>310,578,162</u>		<u>269,190,080</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$715,106,315		\$666,460,582	
5. Payment on unfunded/(overfunded) actuarial accrued liability	41,359,748	10.54%	37,743,195	10.07%
6. Full EANC contribution: (1) + (5)	<u>98,297,535</u>	25.04%	<u>93,598,4667</u>	24.98%
7. Projected salary	\$392,562,624		\$374,700,732	
8. Prior year's funding rate	N/A	12.77%	N/A	11.75%
9. Years to reach full EANC	N/A	12	N/A	13
10. Additional amount for current year	N/A	1.02%	N/A	1.02%
11. Total recommended contribution rate: (8) + (10)	N/A	13.79%	N/A	12.77%

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**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT A**

**Table of Plan Coverage**

Category	Non-Hazardous			Hazardous		
	Year Ended June 30			Year Ended June 30		
	2004	2003	Change From Prior Year	2004	2003	Change From Prior Year
<b>Active members in valuation:</b>						
Number	80,922	82,288	-1.7%	9,349	9,286	0.7%
Average age	44.8	43.8	N/A	38.1	37.3	N/A
Average service	7.9	7.6	N/A	8.1	7.8	N/A
Total salary	\$1,826,870,880	\$1,796,451,180	1.7%	\$392,562,624	\$374,700,732	4.8%
Average salary	22,576	21,831	3.4%	41,990	40,351	4.1%
Account balances	814,908,627	759,938,261	7.2%	256,366,204	227,629,402	12.6%
Total active vested members	53,219	51,009	4.3%	6,206	5,904	5.1%
<b>Vested terminated members</b>	6,927	4,692	47.6%	361	165	118.8%
<b>Retired participants:</b>						
Number in pay status	23,274	21,423	8.6%	3,205	2,942	8.9%
Average age	68.3	68.5	N/A	57.9	57.6	N/A
Average monthly benefit	\$737	\$705	4.5%	\$1,828	\$1,804	1.3%
<b>Disabled members:</b>						
Number in pay status	2,801	2,698	3.8%	309	293	5.5%
Average age	60.9	60.6	N/A	50.7	50.2	N/A
Average monthly benefit	\$699	\$682	2.5%	\$1,109	\$1,095	1.3%
<b>Beneficiaries in pay status</b>	3,054	2,971	2.8%	491	502	-2.2%
<b>Inactive nonvested members due a refund</b>	37,492	27,634	35.7%	1,287	616	108.9%

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT B – Non-Hazardous**

**Members in Active Service as of June 30, 2004  
By Age, Years of Service, and Average Salary**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	5,087	4,865	222	--	--	--	--	--	--	--
	\$16,858	\$16,680	\$20,765	--	--	--	--	--	--	--
25 - 29	4,895	3,845	1,002	48	--	--	--	--	--	--
	21,109	20,074	24,726	\$28,485	--	--	--	--	--	--
30 - 34	7,074	4,559	1,975	517	23	--	--	--	--	--
	22,255	19,505	26,451	30,003	\$32,741	--	--	--	--	--
35 - 39	9,513	5,132	2,751	1,141	432	57	--	--	--	--
	22,047	18,294	22,986	31,311	33,676	\$41,041	--	--	--	--
40 - 44	12,842	5,370	3,916	1,959	951	539	106	1	--	--
	22,755	18,416	20,867	27,492	33,753	38,923	\$43,874	\$25,200	--	--
45 - 49	13,361	4,302	3,756	2,775	1,232	758	477	61	--	--
	24,026	19,310	21,210	24,942	30,427	37,511	42,497	47,143	--	--
50 - 54	11,773	3,131	2,898	2,707	1,610	840	448	127	12	--
	24,409	19,769	21,916	23,628	27,434	33,168	41,594	51,598	\$65,065	--
55 - 59	8,821	2,381	1,947	1,819	1,349	808	379	118	20	--
	23,922	19,542	21,591	23,794	25,785	28,823	37,994	46,887	58,141	--
60 - 64	4,894	1,245	1,204	985	719	433	233	54	14	7
	22,117	17,076	19,650	22,508	25,063	27,229	31,256	47,676	66,351	\$79,471
65 - 69	1,792	510	432	378	240	138	68	15	7	4
	19,696	15,527	17,291	20,637	23,033	24,053	29,855	40,411	56,217	57,501
70 & over	870	229	199	184	132	52	50	12	5	7
	17,783	14,542	14,460	16,724	19,261	19,398	32,944	40,991	33,797	46,785
Total	80,922	35,569	20,302	12,513	6,688	3,625	1,761	388	58	18
	\$22,576	\$18,669	\$21,958	\$25,251	\$28,399	\$32,833	\$39,134	\$48,091	\$59,225	\$61,877

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT B – Hazardous**

**Members in Active Service as of June 30, 2004  
By Age, Years of Service, and Average Salary**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	560	550	10	--	--	--	--	--	--	--
	\$29,062	\$28,881	\$38,977	--	--	--	--	--	--	--
25 - 29	1,360	1,041	316	3	--	--	--	--	--	--
	35,974	33,997	42,396	\$45,204	--	--	--	--	--	--
30 - 34	2,009	930	842	234	3	--	--	--	--	--
	40,364	34,823	43,777	49,830	\$61,728	--	--	--	--	--
35 - 39	1,846	499	526	613	195	13	--	--	--	--
	43,856	34,622	41,887	49,507	54,629	\$49,912	--	--	--	--
40 - 44	1,491	316	285	373	421	87	9	--	--	--
	46,493	33,829	41,087	48,905	54,765	58,548	\$58,795	--	--	--
45 - 49	978	197	157	229	209	120	62	4	--	--
	47,393	33,619	41,642	46,024	53,560	59,728	64,185	\$77,406	--	--
50 - 54	599	154	105	110	75	37	79	35	4	--
	47,632	34,828	41,842	43,381	51,519	56,669	67,054	71,440	\$61,065	--
55 - 59	307	110	78	39	33	21	12	9	5	--
	42,455	34,369	38,815	42,952	49,905	49,895	59,843	81,891	80,143	--
60 - 64	143	49	37	23	18	10	1	2	2	1
	41,051	31,427	40,398	37,942	51,962	57,005	37,968	89,190	85,920	\$69,372
65 - 69	40	22	9	5	3	1	--	--	--	--
	35,731	28,565	42,512	49,308	40,524	50,100	--	--	--	--
70 & over	16	1	2	1	3	2	4	1	1	1
	48,696	20,004	25,656	35,964	48,952	65,994	51,771	70,884	65,208	49,836
Total	9,349	3,869	2,367	1,630	960	291	167	51	12	2
	\$41,990	\$33,493	\$42,365	\$48,176	\$53,961	\$57,755	\$64,486	\$74,437	\$73,502	\$59,604

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT C – Non-Hazardous  
Retired Lives Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	2,640	\$2,048,321.39	8,902	\$4,687,647.65	11,542	\$6,735,969.04
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	1,703	1,381,208.51	702	319,070.23	2,405	1,700,278.74
66-2/3% to beneficiary	501	734,507.12	224	178,999.27	725	913,506.39
50% to beneficiary	733	876,299.22	592	497,159.61	1,325	1,373,458.83
Pop-up option	1,866	2,322,415.22	1,324	1,034,706.53	3,190	3,357,121.75
10 years certain	1	100.94	0	0.00	1	100.94
10 years certain & life	1,173	785,326.89	2,251	1,203,834.98	3,424	1,989,161.87
Social Security option						
Age 62 basic	204	336,307.30	380	318,001.88	584	654,309.18
Age 62 survivorship	459	720,266.71	199	169,685.71	658	889,952.42
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	0	0.00	0	0.00	0	0.00
Dependent child	0	0.00	0	0.00	0	0.00
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	467	356,433.76	410	240,188.90	877	596,622.66
20 years certain & life	299	313,022.23	320	229,071.69	619	542,093.92
5 years certain	1	283.77	0	0.00	1	283.77
PLSO 12 month basic	28	21,007.38	100	62,754.71	128	83,762.09
PLSO 24 month basic	10	6,224.07	52	26,632.56	62	32,856.63
PLSO 36 month basic	70	28,232.62	169	61,926.85	239	90,159.47
PLSO 12 month survivor	45	41,997.90	33	26,661.58	78	68,659.48
PLSO 24 month survivor	30	19,245.00	14	7,167.84	44	26,412.84
PLSO 36 month survivor	<u>107</u>	<u>45,287.72</u>	<u>66</u>	<u>21,427.21</u>	<u>173</u>	<u>66,714.93</u>
Total	10,337	\$10,036,487.75	15,738	\$9,084,937.20	26,075	\$19,121,424.95

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT C – Hazardous  
Retired Lives Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	444	\$788,256.23	116	\$141,515.87	560	\$929,772.10
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	409	661,879.38	18	12,947.24	427	674,826.62
66-2/3% to beneficiary	180	394,573.85	3	6,864.24	183	401,438.57
50% to beneficiary	273	526,539.98	13	16,480.03	286	543,020.01
Pop-up option	1,187	2,358,628.99	29	46,412.00	1,216	2,405,040.99
10 years certain	31	49,340.18	3	8,579.57	34	57,919.75
10 years certain & life	138	222,150.12	24	35,721.86	162	257,871.98
Social Security option						
Age 62 basic	92	138,710.82	5	6,211.48	97	144,922.30
Age 62 survivorship	286	412,450.27	8	5,572.40	294	418,022.67
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	0	0.00	0	0.00	0	0.00
Dependent child	0	0.00	0	0.00	0	0.00
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	46	67,629.69	4	4,523.11	50	72,152.80
20 years certain & life	88	145,230.96	8	8,483.68	96	153,714.64
5 years certain	0	0.00	0	0.00	0	0.00
PLSO 12 month basic	10	11,283.43	4	4,453.42	14	15,736.85
PLSO 24 month basic	9	16,807.04	3	3,604.45	12	20,411.49
PLSO 36 month basic	16	13,157.96	1	345.97	17	13,503.93
PLSO 12 month survivor	16	31,731.93	0	0.00	16	31,731.93
PLSO 24 month survivor	16	21,499.66	0	0.00	16	21,499.66
PLSO 36 month survivor	<u>33</u>	<u>41,014.37</u>	<u>1</u>	<u>139.41</u>	<u>34</u>	<u>41,153.78</u>
Total	3,274	\$5,900,884.86	240	\$301,855.21	3,514	\$6,202,740.07

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT D – Non-Hazardous  
Beneficiary Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	4	\$1,189.82	21	\$13,203.03	25	\$14,392.85
Straight life (old plan)	0	0	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	1,208	521,184.00	230	79,656.55	1,438	600,840.55
66-2/3% to beneficiary	134	62,575.09	31	10,479.94	165	73,055.03
50% to beneficiary	227	76,590.21	72	20,064.42	299	96,654.63
Pop-up option	209	132,250.56	59	27,653.72	268	159,904.28
10 years certain	90	61,592.91	77	38,107.29	167	99,700.20
10 years certain & life	103	55,020.73	99	50,191.28	202	105,212.01
Social Security option						
Age 62 basic	0	0.00	0	0.00	0	0.00
Age 62 survivorship	57	64,335.40	12	8,449.25	69	72,784.65
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	4	664.97	0	0.00	4	664.97
Dependent child	2	601.27	2	352.97	4	954.24
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	81	55,090.07	31	17,737.76	112	72,828.46
20 years certain & life	56	49,123.02	40	18,992.39	96	68,115.41
5 years certain	96	74,981.26	97	57,653.86	193	132,635.12
PLSO 12 month basic	0	0.00	0	0.00	0	0.00
PLSO 24 month basic	0	0.00	0	0.00	0	0.00
PLSO 36 month basic	0	0.00	3	809.43	3	809.43
PLSO 12 month survivor	4	6,164.01	0	0.00	4	6,164.01
PLSO 24 month survivor	2	633.62	0	0.00	2	633.62
PLSO 36 month survivor	<u>2</u>	<u>867.63</u>	<u>1</u>	<u>215.32</u>	<u>3</u>	<u>1,082.95</u>
Total	2,279	\$1,162,865.20	775	\$343,567.21	3,054	\$1,506,432.41

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT D – Hazardous  
Beneficiary Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	0	\$0.00	20	\$17,470.89	20	\$17,470.89
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	92	96,323.51	7	4,480.34	99	100,803.85
66-2/3% to beneficiary	22	25,816.26	2	851.04	24	26,667.30
50% to beneficiary	22	12,988.09	5	4,038.63	27	17,026.72
Pop-up option	57	80,945.95	13	8,328.33	70	89,274.28
10 years certain	15	25,935.53	7	3,567.97	22	29,503.50
10 years certain & life	2	1,379.86	6	4,804.31	8	6,184.17
Social Security option						
Age 62 basic	0	0.00	2	637.20	2	637.20
Age 62 survivorship	40	55,303.18	7	5,993.62	47	61,296.80
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	3	2,302.69	0	0.00	3	2,302.69
Dependent child	77	23,963.54	56	17,258.87	133	41,222.41
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	3	3,010.32	2	1,997.51	5	5,007.83
20 years certain & life	11	18,224.23	10	6,193.07	21	24,417.30
5 years certain	5	3,264.27	3	1,111.07	8	4,375.34
PLSO 12 month basic	0	0.00	0	0.00	0	0.00
PLSO 24 month basic	0	0.00	0	0.00	0	0.00
PLSO 36 month basic	0	0.00	1	862.58	1	862.58
PLSO 12 month survivor	0	0.00	0	0.00	0	0.00
PLSO 24 month survivor	1	141.50	0	0.00	1	141.50
PLSO 36 month survivor	0	0	0	0.00	0	0.00
Total	350	\$349,598.93	141	\$77,595.43	491	\$427,194.36

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT E – Non-Hazardous Retirement**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$44,028,465	\$11,855,694
Member contributions	122,484,428	125,300,584
Less administrative and investment expenses	<u>-11,913,070</u>	<u>-10,879,055</u>
Net contribution income	\$154,599,823	\$126,277,223
<b>Investment income:</b>		
Interest, dividends and other income	\$140,474,161	\$138,657,919
Recognition of capital appreciation	-112,243,733	-121,335,398
Less stock commissions and securities lending expense	<u>-9,581,716</u>	<u>-14,276,556</u>
Net investment income	<u>18,648,712</u>	<u>3,045,965</u>
<b>Total income available for benefits</b>	<b>\$173,248,535</b>	<b>\$129,323,188</b>
<b>Less benefit payments:</b>		
Benefit payments	-\$260,642,995	-\$230,316,847
Refunds	<u>-11,334,057</u>	<u>-10,213,452</u>
Net benefit payments	-\$271,977,052	-\$240,530,299
<b>Change in reserve for future benefits</b>	<b>-\$98,728,517</b>	<b>-\$111,207,111</b>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT E – Non-Hazardous Insurance**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$89,344,241	\$99,234,843
Less administrative and investment expenses	<u>-708,301</u>	<u>-309,021</u>
Net contribution income	\$88,635,940	\$98,925,822
<b>Investment income:</b>		
Interest, dividends and other income	\$10,625,125	\$8,180,059
Recognition of capital appreciation	13,804,584	2,804,204
Less stock commissions and securities lending expense	<u>-1,075,132</u>	<u>-962,271</u>
Net investment income	<u>23,354,577</u>	<u>10,021,992</u>
<b>Total income available for benefits</b>	<b>\$111,990,517</b>	<b>\$108,947,814</b>
<b>Less healthcare premium subsidies</b>	<b>-\$46,651,550</b>	<b>-\$39,385,015</b>
<b>Change in reserve for future benefits</b>	<b>\$65,338,967</b>	<b>\$69,562,799</b>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT E – Hazardous Retirement**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$27,640,775	\$16,905,556
Member contributions	38,667,764	36,202,579
Less administrative and investment expenses	<u>-1,644,607</u>	<u>-1,507,060</u>
Net contribution income	\$64,663,932	\$51,601,075
<b>Investment income:</b>		
Interest, dividends and other income	\$39,023,270	\$39,168,079
Recognition of capital appreciation	-26,431,067	-30,769,513
Less stock commissions and securities lending expense	<u>-2,706,576</u>	<u>-4,180,828</u>
Net investment income	<u>9,885,627</u>	<u>4,217,738</u>
<b>Total income available for benefits</b>	<b>\$74,549,559</b>	<b>\$55,818,813</b>
<b>Less benefit payments:</b>		
Benefit payments	-\$81,421,925	-\$72,531,779
Refunds	<u>-2,520,448</u>	<u>-1,793,971</u>
Net benefit payments	-\$83,942,373	-\$74,325,750
<b>Change in reserve for future benefits</b>	<b>-\$9,392,814</b>	<b>-\$18,506,937</b>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT E – Hazardous Insurance**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$47,036,777	\$45,243,950
Less administrative and investment expenses	<u>-260,354</u>	<u>-142,705</u>
Net contribution income	\$46,776,423	\$45,101,245
<b>Investment income:</b>		
Interest, dividends and other income	\$5,589,010	\$4,216,739
Recognition of capital appreciation	6,287,672	562,884
Less stock commissions and securities lending expense	<u>-563,192</u>	<u>-506,093</u>
Net investment income	<u>11,313,490</u>	<u>4,273,530</u>
<b>Total income available for benefits</b>	<b>\$58,089,913</b>	<b>\$49,374,775</b>
<b>Less healthcare premium subsidies</b>	<b>-\$16,701,831</b>	<b>-\$14,868,573</b>
<b>Change in reserve for future benefits</b>	<b>\$41,388,082</b>	<b>\$34,506,202</b>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT F – Non-Hazardous Retirement  
Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$813,273	\$614,921
<b>Accounts receivable:</b>		
Investment accounts receivable	\$242,770	\$225,031
Year-end interest receivable	23,285,315	22,423,993
Year-end accounts receivable	25,041,039	21,426,306
Alternate Plan accounts receivable	<u>572,838</u>	<u>1,362,202</u>
Total accounts receivable	49,141,962	45,437,532
<b>Investments:</b>		
Bonds	\$1,443,631,252	\$1,452,706,088
Stocks	2,754,886,293	2,224,864,905
Mortgage	247,087,021	211,499,185
Short-term investments	118,667,313	238,154,160
Real estate	2,495,681	4,741,593
Fixed assets	<u>531,136</u>	<u>577,640</u>
Total investments at market value	4,567,298,696	4,132,543,571
<b>Total assets</b>	\$4,617,253,931	\$4,178,596,024
<b>Less accounts payable</b>	-\$3,917,974	-\$3,714,907
<b>Net assets at market value</b>	<u>\$4,613,335,957</u>	<u>\$4,174,881,117</u>
<b>Net assets at actuarial value</b>	<u>\$5,187,851,530</u>	<u>\$5,286,580,047</u>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT F – Non-Hazardous Insurance**

**Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$30,008	\$63,550
<b>Accounts receivable:</b>		
Investment accounts receivable	\$36,997	\$22,463
Year-end interest receivable	1,364,324	1,103,783
Year-end accounts receivable	<u>8,363,612</u>	<u>10,695,236</u>
Total accounts receivable	9,764,933	11,821,482
<b>Investments:</b>		
Bonds	\$51,847,439	\$42,819,734
Stocks	450,829,317	351,228,039
Short-term investments	<u>52,303,176</u>	<u>29,904,766</u>
Total investments at market value	<u>554,979,932</u>	<u>423,952,539</u>
<b>Total assets</b>	\$564,774,873	\$435,837,571
<b>Less accounts payable</b>	-\$897,279	-\$170,446
<b>Net assets at market value</b>	<u>\$563,877,594</u>	<u>\$435,667,125</u>
<b>Net assets at actuarial value</b>	<u>\$585,399,072</u>	<u>\$520,060,105</u>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT F – Hazardous Retirement**

**Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$227,908	\$217,552
<b>Accounts receivable:</b>		
Investment accounts receivable	\$68,840	\$63,810
Year-end interest receivable	6,412,170	6,180,263
Year-end accounts receivable	9,716,164	8,194,121
Alternate Plan accounts receivable	<u>344,812</u>	<u>1,795,357</u>
Total accounts receivable	16,541,986	16,233,551
<b>Investments:</b>		
Bonds	\$394,924,326	\$398,906,715
Stocks	788,757,059	624,403,527
Mortgage	69,112,719	58,421,019
Short-term investments	34,290,213	68,395,341
Real estate	2,416,314	3,055,076
Fixed assets	<u>47,562</u>	<u>51,593</u>
Total investments at market value	<u>1,289,548,193</u>	<u>1,153,233,271</u>
<b>Total assets</b>	\$1,306,318,087	\$1,169,684,374
<b>Less accounts payable</b>	-\$1,306,615	-\$889,902
<b>Net assets at market value</b>	<u>\$1,305,011,472</u>	<u>\$1,168,794,472</u>
<b>Net assets at actuarial value</b>	<u>\$1,457,612,042</u>	<u>\$1,467,004,856</u>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT F – Hazardous Insurance**

**Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$7,071	\$81,731
<b>Accounts receivable:</b>		
Investment accounts receivable	\$19,080	\$11,584
Year-end interest receivable	745,380	559,656
Year-end accounts receivable	<u>3,811,142</u>	<u>3,652,483</u>
Total accounts receivable	4,575,602	4,223,723
<b>Investments:</b>		
Bonds	\$30,331,059	\$21,287,077
Stocks	232,519,309	182,395,584
Short-term investments	<u>30,509,232</u>	<u>15,308,134</u>
Total investments at market value	<u>293,359,600</u>	<u>218,990,795</u>
<b>Total assets</b>	\$297,942,273	\$223,296,249
<b>Less accounts payable</b>	-\$207,987	-\$83,910
<b>Net assets at market value</b>	<u>\$297,734,286</u>	<u>\$223,212,339</u>
<b>Net assets at actuarial value</b>	<u>\$310,578,162</u>	<u>\$269,190,080</u>

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT G – Non-Hazardous Retirement**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Member Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$105,774,000	\$63,590,000	\$474,650,525	\$5,268,000	\$126,358,000	\$2,750,196,558
1998	107,526,000	74,382,000	562,583,445	5,620,000	142,863,000	3,346,205,003
1999	110,591,000	98,566,000	703,324,432	6,519,000	179,940,000	4,072,227,435
2000	106,587,000	96,676,000	1,229,891,099	7,350,000	213,998,000	5,284,033,534
2001	48,914,000	101,597,000	176,147,015	7,820,000	179,037,000	5,423,834,549
2002	4,663,371	121,573,670	61,924,304	10,029,562	204,179,174	5,397,787,158
2003	11,855,694	125,300,584	3,045,965	10,879,055	240,530,299	5,286,580,047
2004	44,028,465	122,484,428	18,648,712	11,913,070	271,977,052	5,187,851,530

**EXHIBIT G – Non-Hazardous Insurance**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$27,504,000	\$10,502,235	\$25,000	\$13,497,000	\$134,688,096
1998	29,271,000	20,197,200	25,000	15,600,000	168,531,296
1999	47,902,000	33,047,873	52,000	17,492,000	231,937,169
2000	55,214,000	54,547,525	114,000	21,942,000	319,642,694
2001	62,292,000	17,606,934	244,000	27,539,000	371,758,628
2002	102,150,788	9,684,163	401,971	32,694,301	450,497,307
2003	99,234,843	10,021,991	309,021	39,385,015	520,060,105
2004	89,344,241	23,354,577	708,301	46,651,550	585,399,072

\* Net of stock commissions and securities lending expense

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT G – Hazardous Retirement**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Member Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$39,552,000	\$15,752,000	\$114,927,805	\$811,000	\$47,812,000	\$763,829,310
1998	42,298,000	16,581,000	158,515,182	902,000	53,264,000	927,057,492
1999	48,291,000	22,918,000	171,505,547	939,000	44,181,553	1,124,651,486
2000	51,739,000	28,476,000	321,208,308	1,085,000	79,447,000	1,445,542,794
2001	20,983,000	27,279,000	51,480,222	974,000	57,645,000	1,486,666,016
2002	10,904,214	35,164,272	19,296,227	1,382,853	65,136,083	1,485,511,793
2003	16,905,556	36,202,579	4,217,738	1,507,060	74,325,750	1,467,004,856
2004	27,640,775	38,667,764	9,885,627	1,644,607	83,942,373	1,457,612,042

**EXHIBIT G – Hazardous Insurance**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$13,305,000	\$5,480,301	\$25,000	\$6,260,000	\$69,832,681
1998	14,275,000	10,510,398	25,000	7,538,000	87,055,079
1999	23,383,000	12,449,144	25,000	8,272,000	114,590,223
2000	55,214,000	8,502,689	52,000	9,597,000	168,657,912
2001	32,149,000	8,708,337	109,000	11,531,000	197,875,249
2002	45,730,333	4,360,735	187,302	13,095,137	234,683,878
2003	45,243,950	4,273,530	142,705	14,868,573	269,190,080
2004	47,036,777	11,313,490	260,354	16,701,831	310,578,162

\* Net of stock commissions and securities lending expense

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT H – Non-Hazardous Retirement**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1990	30	\$93,672,421	\$9,243,290	16	\$118,832,784
06/30/1991	30	61,472,822	5,782,236	17	77,887,480
06/30/1992	30	-125,111,651	-11,217,739	18	-157,785,552
06/30/1993	30	-28,358,370	-2,423,704	19	-35,491,322
06/30/1994	30	59,026,195	4,808,713	20	73,110,612
06/30/1995	30	-35,766,009	-2,777,376	21	-43,736,219
06/30/1996	30	-188,502,047	-13,952,616	22	-227,072,304
06/30/1997	30	-200,122,489	-14,107,376	23	-236,805,300
06/30/1998	30	-311,976,854	-20,945,159	24	-361,973,308
06/30/1999	30	-379,088,077	-24,238,875	25	-430,557,503
06/30/2000	30	-804,685,873	-49,001,499	26	-893,287,272
06/30/2001	30	250,075,433	14,503,230	27	270,956,309
06/30/2002	30	529,261,185	29,233,088	28	558,982,665
06/30/2003	30	391,393,784	20,588,724	29	402,457,777
06/30/2004	30	633,089,111	<u>31,716,923</u>	30	<u>633,089,111</u>
Total			-\$22,788,140		-\$251,392,042

\* Level percentage of salary

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT H – Non-Hazardous Insurance**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1996	30	\$901,011,537	\$66,691,413	22	\$1,085,371,583
06/30/1997	30	29,886,573	2,106,815	23	35,364,836
06/30/1998	30	62,468,342	4,193,931	24	72,479,327
06/30/1999	30	-21,106,379	-1,349,541	25	-23,972,029
06/30/2000	30	70,199,744	4,274,827	26	77,929,215
06/30/2001	30	247,855,413	14,374,479	27	268,550,921
06/30/2002	30	72,249,680	3,990,622	28	76,306,973
06/30/2003	30	96,412,030	5,071,620	29	99,137,423
06/30/2004	30	162,167,375	<u>8,124,370</u>	30	<u>162,167,375</u>
Total			\$107,478,536		\$1,853,335,624

\* Level percentage of salary

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT H – Hazardous Retirement**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1990	30	\$68,584,978	\$6,767,743	16	\$87,006,871
06/30/1991	30	29,934,803	2,815,717	17	37,928,085
06/30/1992	30	-12,941,304	-1,160,341	18	-16,321,027
06/30/1993	30	-7,291,213	-623,158	19	-9,125,162
06/30/1994	30	1,854,577	151,088	20	2,297,104
06/30/1995	30	24,831,672	1,928,280	21	30,365,240
06/30/1996	30	-65,565,268	-4,853,035	22	-78,980,874
06/30/1997	30	-62,908,989	-4,434,688	23	-74,440,321
06/30/1998	30	-50,329,820	-3,378,988	24	-58,395,523
06/30/1999	30	-97,060,446	-6,206,041	25	-110,238,507
06/30/2000	30	-194,399,700	-11,838,007	26	-215,804,432
06/30/2001	30	79,413,115	4,605,597	27	86,043,976
06/30/2002	30	143,568,600	7,929,834	28	151,630,917
06/30/2003	30	195,752,270	10,297,275	29	201,285,832
06/30/2004	30	149,965,899	<u>7,513,092</u>	30	<u>149,965,899</u>
Total			\$9,514,368		\$183,218,078

\* Level percentage of salary

**SECTION 3: Supplemental Information for the County Employees Retirement System**

**EXHIBIT H – Hazardous Insurance**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1996	30	\$318,111,968	\$23,546,132	22	\$383,202,297
06/30/1997	30	53,367,623	3,762,082	23	63,150,003
06/30/1998	30	15,379,222	1,032,513	24	17,843,848
06/30/1999	30	-13,162,362	-841,601	25	-14,949,438
06/30/2000	30	17,607,673	1,072,223	26	19,546,399
06/30/2001	30	82,316,738	4,773,994	27	89,190,047
06/30/2002	30	10,745,007	593,487	28	11,348,409
06/30/2003	30	108,196,487	5,691,525	29	111,255,006
06/30/2004	30	34,519,744	<u>1,729,393</u>	30	<u>34,519,744</u>
Total			\$41,359,748		\$715,106,315

\* Level percentage of salary

**SECTION 3: Supplemental Information for the County Employees Retirement System**

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**EXHIBIT I**

**Definitions of Pension Terms**

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The following list defines certain technical terms for the convenience of the reader:

**Assumptions or Actuarial Assumptions:**

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Normal Cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial Accrued Liability For Actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial Accrued Liability For Pensioners:**

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

**Unfunded Actuarial Accrued Liability:**

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

### SECTION 3: Supplemental Information for the County Employees Retirement System

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#### **Amortization of the Unfunded**

**Actuarial Accrued Liability:** Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

#### **Investment Return:**

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

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**SECTION 4: Reporting Information for the County Employees Retirement System**

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**REPORTING INFORMATION**

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**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT I – Non-Hazardous Retirement  
Summary of Actuarial Valuation Results**

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 3,054 beneficiaries in pay status)		29,129
2. Members inactive during year ended June 30, 2004 with vested rights		6,927
3. Members active during the year ended June 30, 2004		80,922
Fully vested	53,219	
Not vested	27,703	
4. Inactive nonvested members due a refund as of June 30, 2004		37,492

The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$196,430,598
2. Present value of future benefits		7,040,196,995
3. Present value of future normal costs		2,103,737,507
4. Actuarial accrued liability		4,936,459,488
Retired participants and beneficiaries	\$2,351,970,757	
Inactive members with vested rights	64,833,073	
Active members	2,458,264,408	
Inactive nonvested members due a refund	61,391,250	
5. Actuarial value of assets (\$4,613,335,957 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		5,187,851,530
6. Overfunded actuarial accrued liability		-\$251,392,042

**SECTION 4: Reporting Information for the County Employees Retirement System**

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**EXHIBIT I – Non-Hazardous Insurance**  
**Summary of Actuarial Valuation Results**

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$165,464,221
2. Present value of future benefits		4,299,553,283
3. Present value of future normal costs		1,860,818,587
4. Actuarial accrued liability		2,438,734,696
Retired participants and beneficiaries	\$840,650,009	
Inactive members with vested rights	115,280,082	
Active members	1,482,804,605	
5. Actuarial value of assets (\$563,877,594 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		585,399,072
6. Unfunded actuarial accrued liability		\$1,853,335,624

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**SECTION 4: Reporting Information for the County Employees Retirement System**

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**EXHIBIT I – Hazardous Retirement  
Summary of Actuarial Valuation Results**

---

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 491 beneficiaries in pay status)		4,005
2. Members inactive during year ended June 30, 2004 with vested rights		361
3. Members active during the year ended June 30, 2004		9,349
Fully vested	6,206	
Not vested	3,143	
4. Inactive nonvested members due a refund as of June 30, 2004		1,287

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$64,348,648
2. Present value of future benefits		2,263,381,238
3. Present value of future normal costs		622,551,118
4. Actuarial accrued liability		1,640,830,120
Retired participants and beneficiaries	\$839,768,502	
Inactive members with vested rights	6,887,080	
Active members	789,475,677	
Inactive nonvested members due a refund	4,698,861	
5. Actuarial value of assets (\$1,305,011,472 at market value as reported Carpenter, Mountjoy & Bressler, PSC)		1,457,612,042
6. Unfunded actuarial accrued liability		\$183,218,078

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**SECTION 4: Reporting Information for the County Employees Retirement System**

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**EXHIBIT I – Hazardous Insurance**

**Summary of Actuarial Valuation Results**

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$56,937,787
2. Present value of future benefits		1,600,503,739
3. Present value of future normal costs		574,819,262
4. Actuarial accrued liability		1,025,684,477
Retired participants and beneficiaries	\$437,546,991	
Inactive members with vested rights	12,741,696	
Active members	575,395,790	
5. Actuarial value of assets (\$297,734,286 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		310,578,162
6. Unfunded actuarial accrued liability		\$715,106,315

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**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT II – Non-Hazardous Retirement**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$4,072,227,435	\$2,991,420,884	-\$1,080,806,551	136.13%	\$1,449,817,548	-74.55%
06/30/2000	5,284,033,534	3,368,601,134	-1,915,432,400	156.86%	1,575,632,580	-121.57%
06/30/2001	5,423,834,549	3,706,282,212	-1,717,552,337	146.34%	1,597,653,320	-107.50%
06/30/2002	5,397,787,158	4,165,355,149	-1,232,432,009	129.59%	1,688,460,789	-72.99%
06/30/2003	5,286,580,047	4,417,597,802	-868,982,245	119.67%	1,796,451,180	-48.37%
06/30/2004	5,187,851,530	4,936,459,488	-251,392,042	105.09%	1,826,870,880	-13.76%

**EXHIBIT II – Non-Hazardous Insurance**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$231,937,169	\$1,282,874,286	\$1,050,937,117	18.08%	\$1,449,817,548	72.49%
06/30/2000	319,642,694	1,466,716,928	1,147,074,234	21.79%	1,575,632,580	72.80%
06/30/2001	371,758,628	1,793,710,768	1,421,952,140	20.73%	1,597,653,320	89.00%
06/30/2002	450,497,307	1,977,577,038	1,527,079,731	22.78%	1,688,460,789	90.44%
06/30/2003	520,060,105	2,176,963,259	1,656,903,154	23.89%	1,796,451,180	92.23%
06/30/2004	585,399,072	2,438,734,696	1,853,335,624	24.00%	1,826,870,880	101.45%

**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT II – Hazardous Retirement**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$1,124,651,486	\$963,711,775	-\$160,939,711	116.70%	\$260,279,940	-61.83%
06/30/2000	1,445,542,794	1,084,553,697	-360,989,097	133.28%	291,062,928	-124.02%
06/30/2001	1,486,666,016	1,193,860,442	-292,805,574	124.53%	322,819,064	-90.70%
06/30/2002	1,485,511,793	1,327,291,273	-158,220,520	111.92%	346,319,146	-45.69%
06/30/2003	1,467,004,856	1,499,628,782	32,623,926	97.82%	374,700,732	8.71%
06/30/2004	1,457,612,042	1,640,830,120	183,218,078	88.83%	392,562,624	46.67%

**EXHIBIT II – Hazardous Insurance**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$114,590,223	\$518,280,115	\$403,689,892	22.11%	\$260,279,940	155.10%
06/30/2000	168,657,912	599,936,029	431,278,117	28.11%	291,062,928	148.17%
06/30/2001	197,875,249	721,605,292	523,730,043	27.42%	322,819,064	162.24%
06/30/2002	234,683,878	781,184,974	546,501,096	30.04%	346,319,146	157.80%
06/30/2003	269,190,080	935,650,662	666,460,582	28.77%	374,700,732	177.86%
06/30/2004	310,578,162	1,025,684,477	715,106,315	30.28%	392,562,624	182.16%

**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT II – Total Retirement Fund**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) - (a) / (b)]</b>	<b>Increase in Assets</b>
06/30/1960	\$864,451	\$5,602,131	\$4,737,680	84.57%	\$864,451
06/30/1965	5,613,214	12,510,487	6,897,273	55.13%	1,255,742
06/30/1971	23,420,022*	40,305,948	16,885,927	41.89%	4,850,170
06/30/1975	60,854,631*	85,322,085	24,467,454	28.68%	11,704,780
06/30/1976	78,734,622*	128,824,236	50,089,614	38.88%	17,879,991
06/30/1977	100,425,591*	152,900,347	52,474,756	34.32%	21,690,969
06/30/1978	124,799,954*	175,194,867	50,394,913	28.77%	24,374,363
06/30/1979	153,091,905*	213,834,377	60,742,472	28.41%	28,291,951
06/30/1980	190,230,941*	266,018,621	75,787,680	28.49%	37,139,036
06/30/1981	233,770,245	260,872,162	27,101,917	10.39%	43,539,304
06/30/1982	285,534,889	306,087,531	20,552,642	6.71%	51,764,644
06/30/1983	343,155,769	340,705,763	-2,450,006	-0.72%	57,620,880
06/30/1984	406,187,431	421,336,269	15,148,838	3.60%	63,031,662
06/30/1985	478,043,221	463,618,532	-14,424,689	-3.11%	71,855,790
06/30/1986	603,815,800	535,948,094	-67,867,706	-12.66%	125,772,579
06/30/1987	727,730,727	678,442,760	-49,287,967	-7.26%	123,914,927
06/30/1988	839,578,896	829,346,323	-10,232,573	-1.23%	111,848,169
06/30/1989	1,078,052,635	1,113,868,548	35,815,913	3.22%	238,473,739
06/30/1990	1,270,066,267	1,432,323,666	162,257,399	11.33%	192,013,632
06/30/1991	1,396,227,005	1,654,338,706	258,111,701	15.60%	126,160,738
06/30/1992**	1,735,038,908	1,861,978,403	126,939,495	6.82%	338,811,903
06/30/1993	1,985,680,709	2,079,930,047	94,249,338	4.53%	250,641,801
06/30/1994	2,173,354,772	2,330,344,241	156,989,469	6.74%	187,674,063
06/30/1995	2,454,128,060	2,603,575,921	149,447,861	5.74%	280,773,288
06/30/1996	2,880,028,538	2,778,316,473	-101,712,065	-3.66%	425,900,478
06/30/1997	3,514,025,868	3,144,928,093	-369,096,965	-11.74%	633,997,330

**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT II – Total Retirement Fund (continued)**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) - (a) / (b)]</b>	<b>Increase in Assets</b>
06/30/1998	4,273,262,495	3,529,912,902	-743,349,593	-21.06%	759,236,627
06/30/1999	5,196,878,921	3,955,132,659	-1,241,746,262	-31.40%	923,616,426
06/30/2000	6,729,576,328	4,453,154,831	-2,276,421,497	-51.12%	1,532,697,407
06/30/2001***	6,910,500,565	4,900,142,654	-2,010,357,911	-41.03%	180,924,237
06/30/2002	6,883,298,951	5,492,646,422	-1,390,652,529	-25.32%	-27,201,614
06/30/2003	6,753,584,903	5,917,226,584	-836,358,319	-14.13%	-129,714,048
06/30/2004	6,645,463,572	6,577,289,608	-68,173,964	-1.04%	-108,121,331

\* Includes capitalized appreciation of investments.

\*\* Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

\*\*\* Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

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**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT II – Total Insurance Fund**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) – (a)/(b)]</b>	<b>Increase in Assets</b>
06/30/1990	\$29,430,397	\$700,151,838	\$670,720,901	95.80%	N/A
06/30/1991	42,420,744	823,012,809	780,592,065	94.85%	12,989,807
06/30/1992	56,955,901	1,041,905,457	984,949,556	94.53%	14,535,157
06/30/1993	74,253,872	1,244,258,042	1,170,004,170	94.03%	17,297,971
06/30/1994	99,514,895	1,551,138,800	1,451,623,905	93.88%	25,261,023
06/30/1995	125,453,940	1,679,893,225	1,554,439,285	92.53%	25,939,045
06/30/1996**	167,536,241	1,386,659,746	1,219,123,505	87.92%	42,082,301
06/30/1997	204,520,777	1,541,360,457	1,336,839,680	86.73%	36,984,536
06/30/1998	255,586,375	1,706,626,110	1,451,039,735	85.02%	51,065,598
06/30/1999	346,527,392	1,801,154,401	1,454,627,009	80.76%	90,941,017
06/30/2000	488,300,606	2,066,652,957	1,578,352,351	76.37%	141,773,214
06/30/2001***	569,633,878	2,515,316,060	1,945,682,182	77.35%	81,333,272
06/30/2002	685,181,185	2,758,762,012	2,073,580,827	75.16%	115,547,307
06/30/2003	789,250,185	3,112,613,921	2,323,363,736	74.64%	104,069,000
06/30/2004	895,977,234	3,464,419,173	2,568,441,939	74.14%	106,727,049

\*\* Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

\*\*\* Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT III – Non-Hazardous**

**Supplementary Information Required by the GASB**

<b>Valuation date</b>	June 30, 2004
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Level percent of salary
<b>Remaining amortization period</b>	16 to 30 years
<b>Asset valuation method</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

**Actuarial assumptions:**

Investment rate of return	8.25%
Payroll growth	5.00%

**Plan membership:**

Retired participants and beneficiaries receiving benefits	29,129
Terminated members entitled to, but not yet receiving benefits	6,927
Active members	<u>80,922</u>
Total	116,978

**Contracts in Force – Retirees and Dependents**

<b>Age</b>	<b>Total</b>	<b>100% Paid</b>	<b>75% Paid</b>	<b>50% Paid</b>	<b>25% Paid</b>	<b>0% Paid</b>
Single; Pre-Medicare	5,598	3,732	546	526	250	544
Family; Pre-Medicare	245	220	5	10	8	2
Parent Plus; Pre-Medicare	246	180	5	5	5	51
Couple; Pre-Medicare	701	550	57	64	29	1
Medicare Regular	2,756	68	344	765	847	732
Medicare High Option	<u>10,424</u>	<u>4,363</u>	<u>1,986</u>	<u>1,816</u>	<u>892</u>	<u>1,367</u>
Total	19,970	9,113	2,943	3,186	2,031	2,697

**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT III – Hazardous  
Supplementary Information Required by the GASB**

<b>Valuation date</b>	June 30, 2004
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Level percent of salary
<b>Remaining amortization period</b>	16 to 30 years
<b>Asset valuation method</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

**Actuarial assumptions:**

Investment rate of return	8.25%
Payroll growth	5.00%

**Plan membership:**

Retired participants and beneficiaries receiving benefits	4,005
Terminated members entitled to, but not yet receiving benefits	361
Active members	<u>9,349</u>
Total	13,715

**Contracts in Force – Retirees and Dependents**

<b>Age</b>	<b>Total</b>	<b>100% Paid</b>	<b>75% Paid</b>	<b>50% Paid</b>	<b>25% Paid</b>	<b>0% Paid</b>
Single; Pre-Medicare	1,087	962	54	51	15	5
Family; Pre-Medicare	616	601	8	5	2	0
Parent Plus; Pre-Medicare	223	207	7	5	4	0
Couple; Pre-Medicare	847	825	17	3	2	0
Medicare Regular	45	6	7	16	16	0
Medicare High Option	<u>913</u>	<u>761</u>	<u>74</u>	<u>50</u>	<u>23</u>	<u>5</u>
Total	3,731	3,362	167	130	62	10

**SECTION 4: Reporting Information for the County Employees Retirement System**

**EXHIBIT IV**

**Actuarial Assumptions and Actuarial Cost Method**

**Mortality Rates:**

*Healthy:* 1983 Group Annuity Mortality Table\*

*Disabled:* Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security

\* Rates increased by 0.05% for hazardous plan active members.

**Termination Rates before Retirement:**

Age	Non-Hazardous				Hazardous			
	Mortality		Rate (%)		Mortality		Rate (%)	
	Male	Female	Disability	Withdrawal*	Male	Female	Disability	Withdrawal
20	0.04	0.02	0.03	2.40	0.09	0.07	0.04	3.04
25	0.05	0.03	0.03	2.40	0.10	0.08	0.04	3.04
30	0.06	0.03	0.04	2.40	0.11	0.08	0.05	3.38
35	0.09	0.05	0.06	2.40	0.14	0.10	0.07	2.44
40	0.12	0.07	0.10	2.00	0.17	0.12	0.13	1.50
45	0.22	0.10	0.21	1.80	0.27	0.15	0.26	0.75
50	0.39	0.16	0.42	1.60	0.44	0.21	0.53	0.00
55	0.61	0.25	0.79	1.20	0.66	0.30	0.99	0.00
60	0.92	0.42	1.39	0.20	0.97	0.47	1.74	0.00

\*Withdrawal rates during the first five years of employment are 35%, 10%, 7%, 5%, and 4% for non-hazardous plan members.

**SECTION 4: Reporting Information for the County Employees Retirement System**

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<b>Non-Hazardous Retirement Rates:</b>	<b>Age</b>	<b>Retirement Probability*</b>
	55-57	0.04
	58-59	0.05
	60-61	0.06
	62	0.25
	63-64	0.10
	65	0.50
	66-67	0.20
	68	0.25
	69	0.40
	70 and older	1.00

\*Retirement probability is 0.25 at first age member is eligible for unreduced retirement benefits.

<b>Hazardous Retirement Rates:</b>	60% will retire as soon as eligible for unreduced benefit and balance will continue until age 55.
<b>Non-Hazardous Retirement Age for Inactive Vested Participants:</b>	65
<b>Hazardous Retirement Age for Inactive Vested Participants:</b>	55
<b>Percent Married:</b>	100%
<b>Age of Spouse:</b>	Females 3 years younger than males.
<b>Dependent Children:</b>	For a hazardous employee's duty-related death benefits, it is assumed that the employee is survived by two dependent children each age 6.
<b>Net Investment Return:</b>	8.25%

**SECTION 4: Reporting Information for the County Employees Retirement System**

**Salary Increases:**

<b>Years of Service</b>	<b>Rate (%)</b>
1	12.00
2	10.00
3	8.00
4 or more	6.50

**Payroll Growth:** 5.0%

**Retiree Medical Insurance Election:**

Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

**Monthly Contribution Rates:**

**Pre-Medicare Coverage  
Rate in Effect on Valuation Date**

	<b>Single</b>	<b>Family</b>	<b>Parent Plus</b>	<b>Couple</b>
Region 1	\$288.36	\$648.88	\$389.32	\$584.00
Region 2	312.00	702.00	421.20	631.80
Region 3	436.00	981.20	588.72	883.08
Region 4	286.16	643.92	386.36	579.52

**Medicare Rate**

**Contracts in Force**

<b>Carrier</b>	<b>Low Option</b>	<b>High Option</b>	<b>Low Option</b>	<b>High Option</b>
Anthem Blue Seniors	\$110.00	\$315.44	3,898	23,013
Bankers Life Medicare	82.70	195.35	913	618

**Weighted Medicare Coverage  
Rate in Effect on Valuation Date**

	<b>Low Option</b>	<b>High Option</b>
All Members	\$104.82	\$312.30

**SECTION 4: Reporting Information for the County Employees Retirement System**

---

<b>Medical Contribution Rate Increases:</b>	<u>Year</u>	<u>Rate(%)</u>
	2004-2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	7.00

**Members with Multiple Service Records:** For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

---

<b>Non-Hazardous Administrative Expenses:</b>	\$8,700,000
<b>Hazardous Administrative Expenses:</b>	\$800,000

**SECTION 4: Reporting Information for the County Employees Retirement System**

---

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**Actuarial Value of Assets:** Market value of assets less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

---

**Actuarial Cost Method:** Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

**SECTION 4: Reporting Information for the County Employees Retirement System**

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**EXHIBIT V**

**Summary of Plan Provisions**

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This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

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**Plan Year:** July 1 through June 30

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**Non-Hazardous Normal Retirement:**

*Age Requirement* 65

*Service Requirement* None

*Amount* If a member has at least 48 months of service, the monthly benefit is 2.20% times final average compensation times years of service.  
Final compensation is the average salary during the five highest paid fiscal years. If the months of service credit during the highest five-year period is less than forty-eight, one or more additional fiscal years shall be used.  
If a member has less than 48 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

**Hazardous Normal Retirement:**

*Age Requirement* 55

*Service Requirement* None

*Amount* If a member has at least 60 months of service, the monthly benefit is 2.50% times final average compensation time years of service.  
Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used.  
If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

**SECTION 4: Reporting Information for the County Employees Retirement System**

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**Non-Hazardous Early Retirement:**

*Requirement*

Age 55 with 60 months service or any age with 25 years service.

*Amount*

Normal retirement benefit reduced by 5% per year for the first five years and 4% per year for the next five years for each year the member is younger than age 65 or has less than 27 years service, whichever is smaller.

**Hazardous Early Retirement:**

*Requirement*

Age 50 with 15 years of service or any age with 20 years service.

*Amount*

Normal retirement benefit reduced by 5.5% per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

---

**Non-Hazardous Disability:**

*Age Requirement*

None

*Service Requirement*

60 months

*Amount*

Normal retirement benefit except that service credit will be added to total service for the period from the last day of paid employment to the member's 65<sup>th</sup> birthday or until the combined total service as of the last day of paid employment and added service equals 25 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For members with at least 25 years of service but less than 27 years service, total service shall be 27 years. For employees with 27 or more years of service credit, actual service will be used.

A contributing member in a non-hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of the member's final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

**SECTION 4: Reporting Information for the County Employees Retirement System**

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**Hazardous Disability:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's 55 <sup>th</sup> birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 or more years of service credit, actual service credit will be used.  A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.

---

**Vesting:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.
<i>Normal Retirement Age</i>	65 for non-hazardous members and 55 for hazardous members.

**SECTION 4: Reporting Information for the County Employees Retirement System**

---

**Pre-Retirement Death Benefit (not in line of duty):**

*Requirement* Any age with 60 months service or age 65 with 48 months service.  
*Amount* Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

**Spouse's Pre-Retirement Death Benefit (in line of duty):**

*Requirement* None  
*Amount* The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.

**Dependent Non-Spouse's Death Benefit (in line of duty) – Hazardous Plan:**

*Requirement* None  
*Amount* The non-spouse may choose (1) a \$10,000 lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

**Dependent Child's Death Benefit (in line of duty):**

*Requirement* None  
*Amount* 10% of member's final monthly rate of pay up to a maximum of 40%.

---

**Post-Retirement Death Benefit:**

*Lump-sum Benefit* \$5,000  
*Husband and Wife* The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

---

**Insurance Plan for Retirees:**

The Retirement System pays a portion of medical premiums for retirees, and in the case of hazardous duty retirees, their dependents and beneficiaries. The Insurance Fund will pay 0%, 25%, 50%, 75%, or 100% of the premiums depending on retiree eligibility as reported by the System.

**State Police Retirement System**

*Actuarial Valuation and Review  
as of June 30, 2004*

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*November 11, 2004*

*Board of Trustees  
State Police Retirement System  
Perimeter Park West  
1260 Louisville Road  
Frankfort, Kentucky 40601-6124*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of June 30, 2004. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2005 and analyzes the preceding year's experience.*

*The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.*

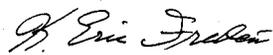
*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.*

*We look forward to reviewing this report at your next meeting and to answering any questions.*

*Sincerely,*

*THE SEGAL COMPANY*

By:   
*Leon F. (Rocky) Joyner, Jr., ASA, MAAA  
Vice President and Actuary*

  
*K. Eric Fredén, FSA, MAAA  
Associate Actuary*



## SECTION 1

### VALUATION SUMMARY

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## **SECTION 1: Valuation Summary for the State Police Retirement System**

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### **Purpose**

This report has been prepared by The Segal Company to present a valuation of the State Police Retirement System as of June 30, 2004. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2004, provided by the Board;
- The assets of the Plan as of June 30, 2004, provided by the Auditor;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### **Significant Issues in Valuation Year**

The following key findings were the result of this actuarial valuation:

- The State Police Retirement System's basic financial goal is to establish contributions which fully fund the System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
- The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30-year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
- The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior year's rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016.
- The rates calculated in this report may be adopted by the Board for July 1, 2005 through June 30, 2006.

**SECTION 1: Valuation Summary for the State Police Retirement System**

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- The following summarizes the required contributions for the year beginning July 1, 2005 and compares them to the prior valuation amounts.

<u>Plan</u>	<u>July 1, 2005 Rate</u>	<u>July 1, 2004 Rate</u>
Retirement	14.49%	8.49%
Insurance	<u>20.34</u>	<u>19.59</u>
Total	34.83%	28.08%

- The increase in the total rate is due to:

Retirement plan investment loss	4.09%
Retiree COLA	0.58
Insurance Phase-in*	0.75
Change in administrative expense assumption	0.01
Other experience	<u>1.32</u>
Total change	6.75%

\* Includes a portion of all insurance plan gains and losses for the year.

- The actuarial valuation report as of June 30, 2004 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan. Because the actuarial value of assets involves a smoothing method, changes in market value are not fully reflected immediately in the actuarial value of assets. Rather, that effect is spread over a period of years.

## SECTION 1: Valuation Summary for the State Police Retirement System

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- As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2004 are:

<u>Plan</u>	<u>Unrecognized investment losses as of 6/30/2004</u>	<u>Actuarial value as a percentage of market value</u>
Retirement	\$49,356,787	114.7%
Insurance	6,200,828	106.9

These investment losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.25% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.25% rate and all other actuarial assumption are met, the contribution requirements would still increase in each of the next few years.

**SECTION 1: Valuation Summary for the State Police Retirement System**

**Summary of Key Valuation Results**

	<b>June 30, 2004</b>	<b>June 30, 2003</b>
<b>Contributions for next fiscal year:</b>		
Retirement	14.49%	8.49%
Insurance	<u>20.34</u>	<u>19.59</u>
Total	34.83%	28.08%
<b>Funded status as of valuation date:</b>		
<u>Retirement</u>		
Actuarial accrued liability	\$437,482,425	\$414,881,459
Actuarial value of assets	385,077,195	413,063,576
Funded ratio on actuarial value of assets	88.02%	99.56%
Market value of assets	\$335,720,408	\$319,116,232
Funded ratio on market value of assets	76.74%	76.92%
<u>Insurance</u>		
Actuarial accrued liability	\$197,604,301	\$184,501,205
Actuarial value of assets	96,622,908	90,747,967
Funded ratio on actuarial value of assets	48.90%	49.19%
Market value of assets	\$90,422,080	\$72,553,617
Funded ratio on market value of assets	45.76%	39.32%
<b>Demographic data as of valuation date:</b>		
Number of retired participants and beneficiaries	992	941
Number of vested former members	44	21
Number of former members due a refund	199	92
Number of active members	999	1,019
Total salary	\$43,835,208	\$43,760,832
Average salary	43,879	42,945

## SECTION 2: Valuation Results for the State Police Retirement System

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### A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, C, and D.

The ratio of non-actives to actives has slowly but steadily climbed for the past decade. As the number of annuitants per active employee rises, cash flow is impacted. The system either becomes more dependent on investment income to cover benefit payments, or contributions must rise to meet these obligations. (For the retirement plan, contributions have been less than benefit payments for the past decade.)

#### **Active Members**

Plan costs are affected by the age, years of service and salaries of active members. In this year's valuation, there were 999 active members with an average age of 36.4, average service of 10.7 years and average salaries of \$43,879. The 1,019 active members in the prior valuation had an average age of 35.9, average service of 10.9 years and average salaries of \$42,945.

#### **Inactive Members**

In this year's valuation, there were 44 members with a vested right to a deferred or immediate vested benefit. In addition, there were 199 members entitled to a return of their employee contributions.

#### **Retired Participants and Beneficiaries**

As of June 30, 2004, 878 retired participants and 114 beneficiaries were receiving total monthly benefits of \$2,567,134. For comparison, in the previous valuation, there were 826 retired participants and 115 beneficiaries receiving monthly benefits of \$2,342,962.

**SECTION 2: Valuation Results for the State Police Retirement System**

**CHART 1**

**Member Population: 1996 – 2004**

*A historical perspective of how the member population has changed over the past nine valuations can be seen in this chart.*

<b>Year Ended June 30</b>	<b>Active Members</b>	<b>Vested Terminated Members*</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
1996	1,002	8	625	0.63
1997	943	9	669	0.72
1998	954	11	739	0.79
1999	985	14	762	0.79
2000	1,023	9	797	0.79
2001	1,016	12	842	0.84
2002	1,002	20	897	0.92
2003	1,019	21	941	0.94
2004	999	44	992	1.04

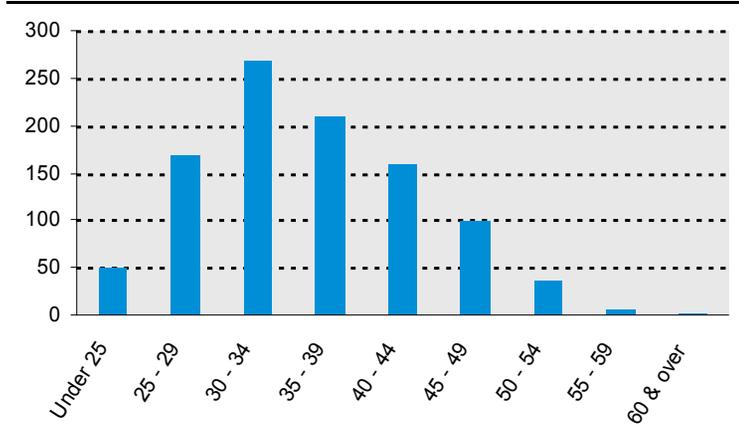
*\*Excludes terminated members due a refund of employee contribution.*

**SECTION 2: Valuation Results for the State Police Retirement System**

*These graphs show a distribution of active members by age and by years of service.*

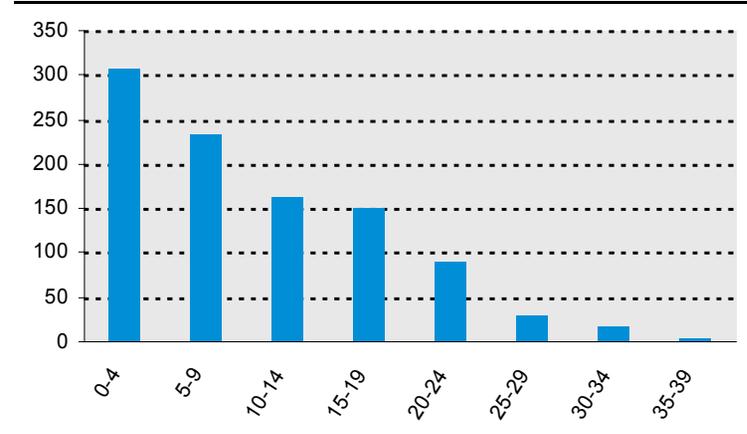
**CHART 2**

**Distribution of Active Members by Age as of June 30, 2004**



**CHART 3**

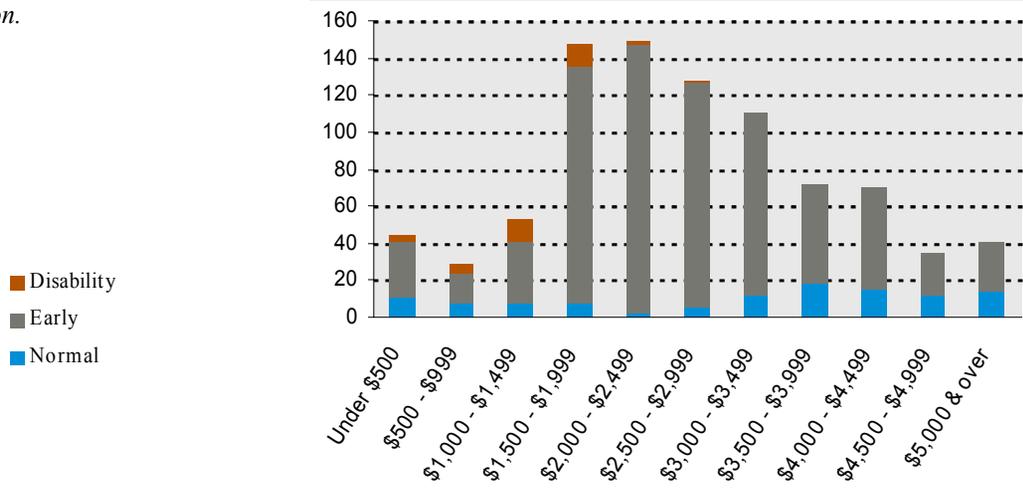
**Distribution of Active Members by Years of Service as of June 30, 2004**



*These graphs show a distribution of the current retired participants based on their monthly amount and age, by type of pension.*

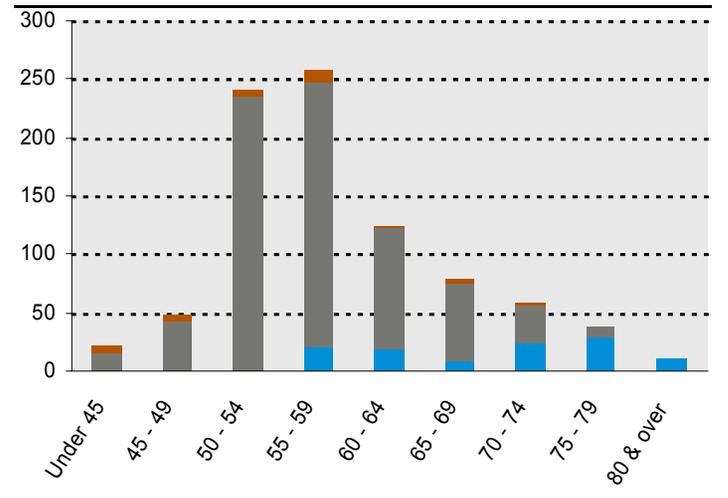
**CHART 4**

**Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2004**



**CHART 5**

**Distribution of Retired Participants by Type and by Age as of June 30, 2004**



## SECTION 2: Valuation Results for the State Police Retirement System

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### B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative and investment expenses) and net investment earnings (less common stock commissions and securities lending expense) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits E, F and G.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

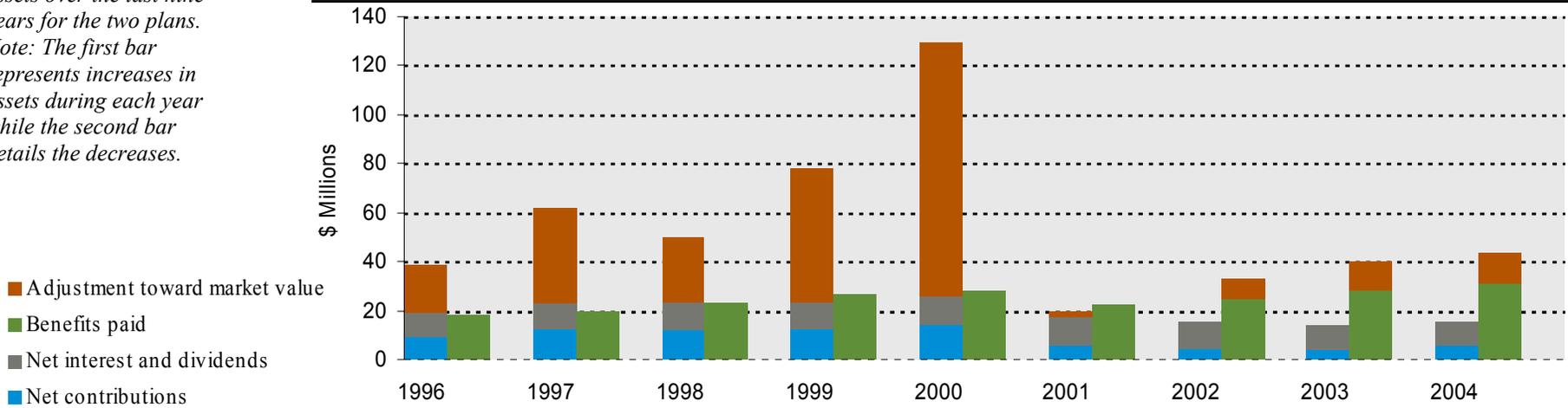
Both the actuarial value and market value of assets are representations of the System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

**SECTION 2: Valuation Results for the State Police Retirement System**

*These charts depict the components of changes in the actuarial value of assets over the last nine years for the two plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

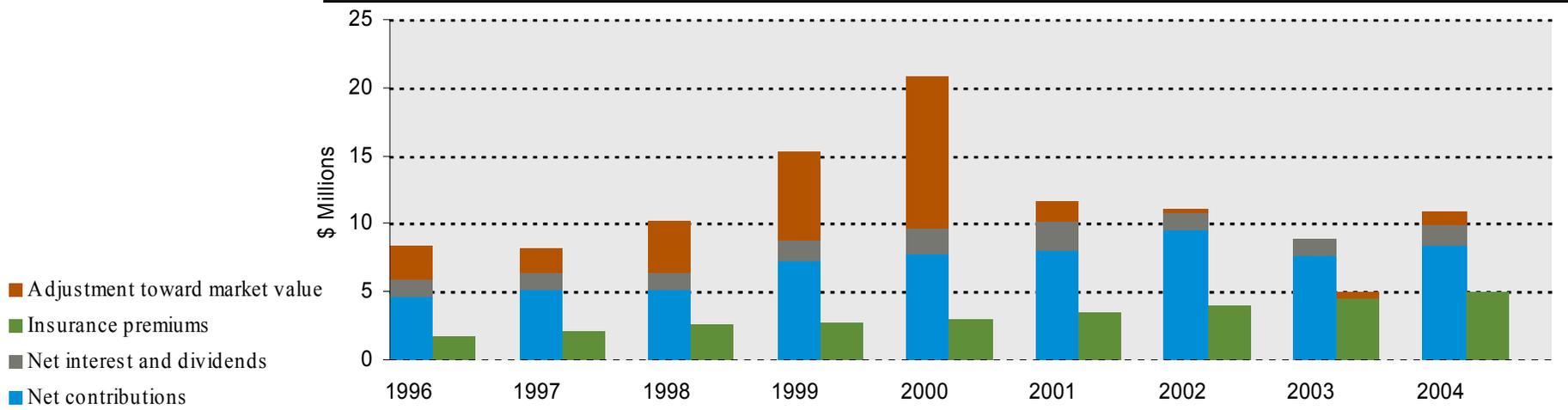
**CHART 6A – Retirement**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1996 – 2004**



**CHART 6B – Insurance**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1996 – 2004**



## SECTION 2: Valuation Results for the State Police Retirement System

These charts show the determination of the actuarial value of assets as of the valuation date.

### CHART 7A – Retirement

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

	Original		Unrecognized
1. Market value of assets			\$335,720,408
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$8,827,136	\$1,765,427	\$7,061,709
(b) Year ended June 30, 2003	-21,265,059	-4,253,012	-12,759,036
(c) Year ended June 30, 2002	-51,918,114	-10,383,623	-20,767,246
(d) Year ended June 30, 2001	-114,461,071	-22,892,214	<u>-22,892,214</u>
(e) Total unrecognized return			-49,356,787
3. Final actuarial value of assets: (1) – (2e)			<u>\$385,077,195</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			114.7%

### CHART 7B – Insurance

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2004

	Original		Unrecognized
1. Market value of assets			\$90,422,080
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(a) Year ended June 30, 2004	\$6,867,493	\$1,373,499	\$5,493,994
(b) Year ended June 30, 2003	-5,900,932	-1,180,186	-3,540,558
(c) Year ended June 30, 2002	-14,174,603	-2,834,921	-5,669,842
(d) Year ended June 30, 2001	-12,422,108	-2,484,422	<u>-2,484,422</u>
(e) Total unrecognized return			-6,200,828
3. Final actuarial value of assets: (1) – (2e)			<u>\$96,622,908</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			106.9%

\* Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

**SECTION 2: Valuation Results for the State Police Retirement System**

**CHART 8**

**Calculation of Unrecognized Return for the Year Ended June 30, 2004**

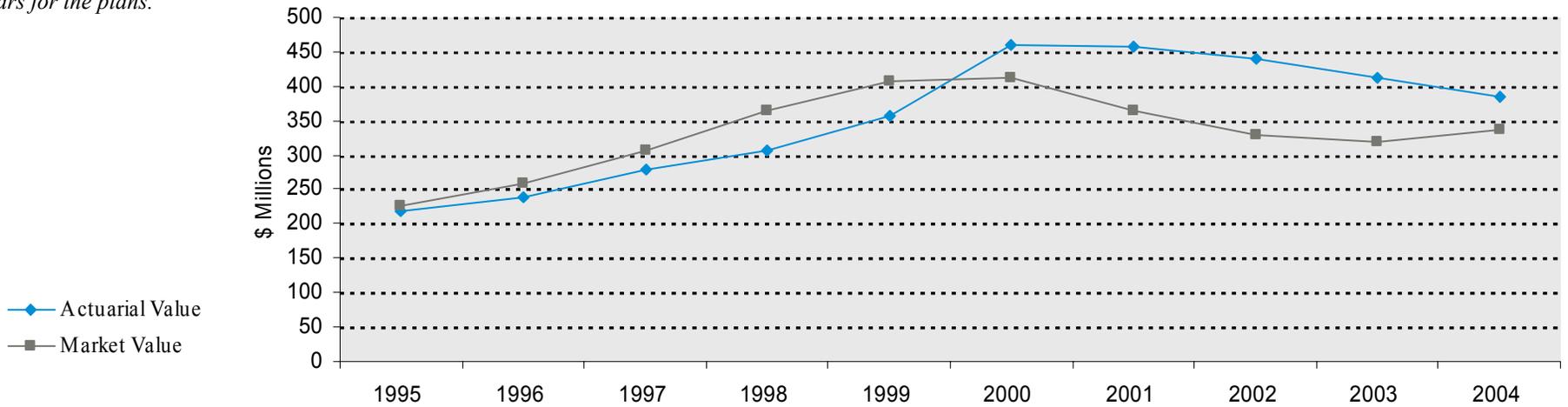
	<b>Retirement</b>	<b>Insurance</b>
1. Employer and member contributions	\$6,027,928	\$8,455,498
2. Benefit payments including refunds, or healthcare premiums	30,973,104	4,992,040
3. Administrative and investment expenses	313,604	88,416
4. Net cash flow: (1) - (2) - (3)	-25,258,780	3,375,042
5. Market value of assets as of June 30, 2003	319,116,232	72,553,617
6. Market value of assets as of June 30, 2004	335,720,408	90,422,080
7. Actuarial value of assets as of June 30, 2003	413,063,576	90,747,967
8. Average actuarial value of assets: (7) + [0.5 x (4)]	400,434,186	92,435,488
9. Expected return on an actuarial basis: 8.25% of (8)	33,035,820	7,625,928
10. Gain/(loss) for the year ended June 30, 2004: (6) - (5) - (4) - (9)	8,827,136	6,867,493
11. Unrecognized return as of June 30, 2004: 80% of (10)	7,061,709	5,493,994

**SECTION 2: Valuation Results for the State Police Retirement System**

*These charts show the change in the actuarial value of assets versus the market value over the past ten years for the plans.*

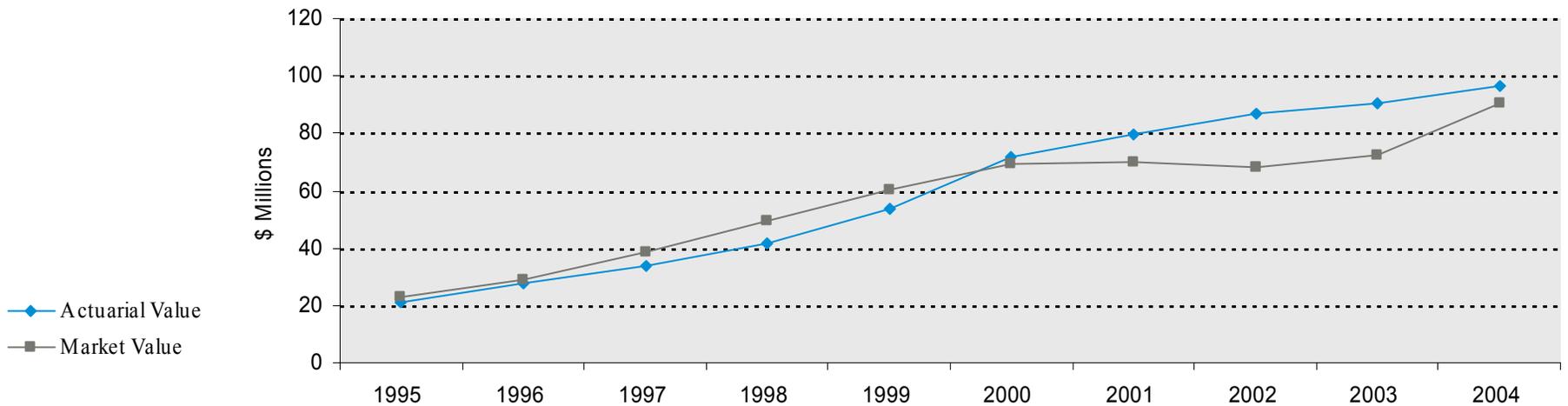
**CHART 9A – Retirement**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1995– 2004**



**CHART 9B – Insurance**

**Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1995 – 2004**



**SECTION 2: Valuation Results for the State Police Retirement System**

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**C. ACTUARIAL EXPERIENCE**

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

Chart 10 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

*This chart provides a summary of the actuarial experience during the past year.*

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**CHART 10**  
**Actuarial Experience for Year Ended June 30, 2004**

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	<b>Retirement</b>	<b>Insurance</b>
1. Net gain/(loss) from investments*	-\$35,763,421	-\$5,126,029
2. Net gain/(loss) from administrative expenses	-2,367	-33,693
3. Net gain/(loss) from other experience**	<u>-12,923,184</u>	<u>3,940,519</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$48,688,972	-\$1,219,203

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\* Details in Chart 11

\*\* Details in Chart 14

**SECTION 2: Valuation Results for the State Police Retirement System**

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**Investment Rate of Return**

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the System’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. Chart 11 shows the net investment experience for each plan for the year.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 12, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last nine years.

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2004 with regard to its investments.

*This chart shows the gain/(loss) due to investment experience.*

**CHART 11**  
**Actuarial Value Investment Experience for Year Ended June 30, 2004**

	<b>Retirement</b>	<b>Insurance</b>
1. Actual return	-\$2,727,601	\$2,499,899
2. Average value of assets	400,434,186	92,435,488
3. Actual rate of return: (1) ÷ (2)	-0.68%	2.70%
4. Assumed rate of return	8.25%	8.25%
5. Expected return: (2) x (4)	\$33,035,820	\$7,625,928
6. Actuarial gain/(loss): (1) – (5)	<u>-\$35,763,421</u>	<u>-\$5,126,029</u>

## SECTION 2: Valuation Results for the State Police Retirement System

### CHART 12A – Retirement

#### Investment Return – Actuarial Value vs. Market Value: 1996 - 2004

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1996	\$9,339,000	4.38%	\$19,677,903	9.24%	\$29,016,903	13.62%	\$39,650,476	17.81%
1997	10,892,000	4.66	38,726,929	16.57	49,618,929	21.23	56,720,285	22.33
1998	11,038,000	4.03	26,511,643	9.67	37,549,643	13.69	67,163,306	22.27
1999	10,655,000	3.56	54,221,278	18.10	64,876,278	21.66	56,848,150	15.94
2000	11,938,000	3.40	103,301,378	29.45	115,239,378	32.85	18,631,485	4.66
2001	12,131,000	2.69	2,093,280	0.46	14,224,280	3.16	-29,707,210	-7.37
2002	11,567,921	2.59	-8,064,723	-1.81	3,503,198	0.79	-15,336,844	-4.33
2003	9,860,621	2.31	-12,149,278	-2.84	-2,288,657	-0.54	13,975,133	4.41
2004	<u>9,595,469</u>	2.40	<u>-12,323,070</u>	-3.08	<u>-2,727,601</u>	-0.68	<u>41,862,956</u>	13.66
Total	\$97,017,011		\$211,995,340		\$309,012,351		\$249,807,737	
						Average return	9.98%	8.57%

### CHART 12B – Insurance

#### Investment Return – Actuarial Value vs. Market Value: 1996 - 2004

Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1996	\$1,349,000	5.97%	\$2,453,072	10.85%	\$3,802,072	16.82%	\$3,042,531	12.45%
1997	1,293,000	4.41	1,814,216	6.19	3,107,216	10.61	6,753,913	22.25
1998	1,344,000	3.83	3,687,017	10.50	5,031,017	14.32	8,320,673	20.88
1999	1,537,000	3.52	6,490,359	14.87	8,027,359	18.39	6,577,625	12.73
2000	1,878,000	3.33	11,119,853	19.74	12,997,853	23.08	4,144,524	6.59
2001	2,084,000	2.82	1,534,784	2.07	3,618,784	4.89	-4,023,535	-5.61
2002	1,283,315	1.55	213,261	0.26	1,496,576	1.81	-7,387,596	-10.16
2003	1,296,362	1.47	-502,024	-0.57	794,338	0.90	1,392,935	2.00
2004	<u>1,614,498</u>	1.75	<u>885,401</u>	0.96	<u>2,499,899</u>	2.70	<u>14,493,421</u>	19.52
Total	\$13,679,175		\$27,695,939		\$41,375,114		\$33,314,491	
						Average return	7.89%	6.70%

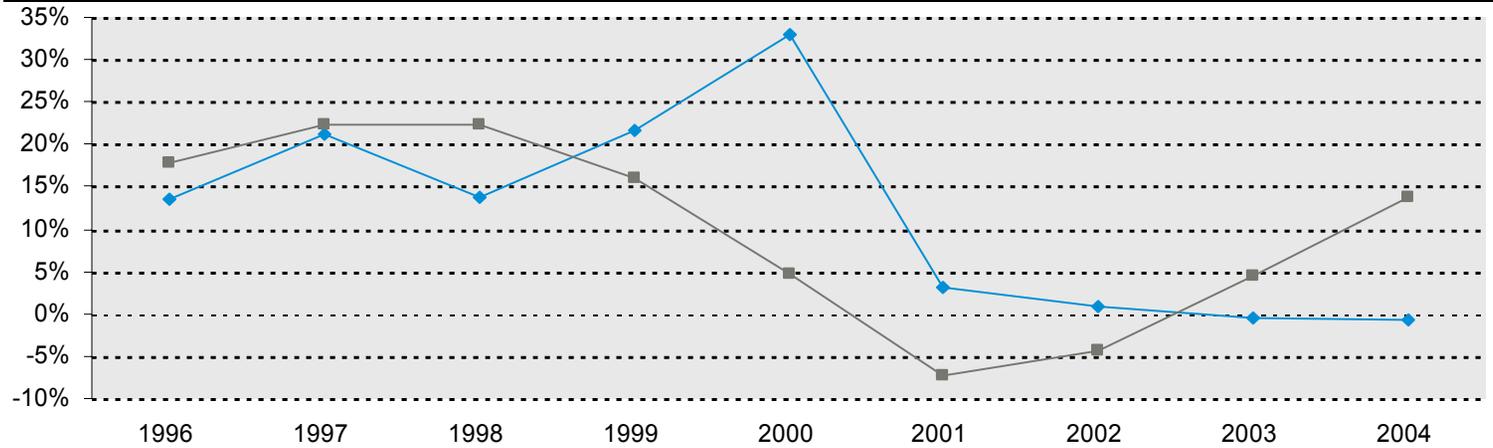
**SECTION 2: Valuation Results for the State Police Retirement System**

*The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1996 - 2004 for the plans.*

—◆— Actuarial Value  
 —■— Market Value

**CHART 13A – Retirement**

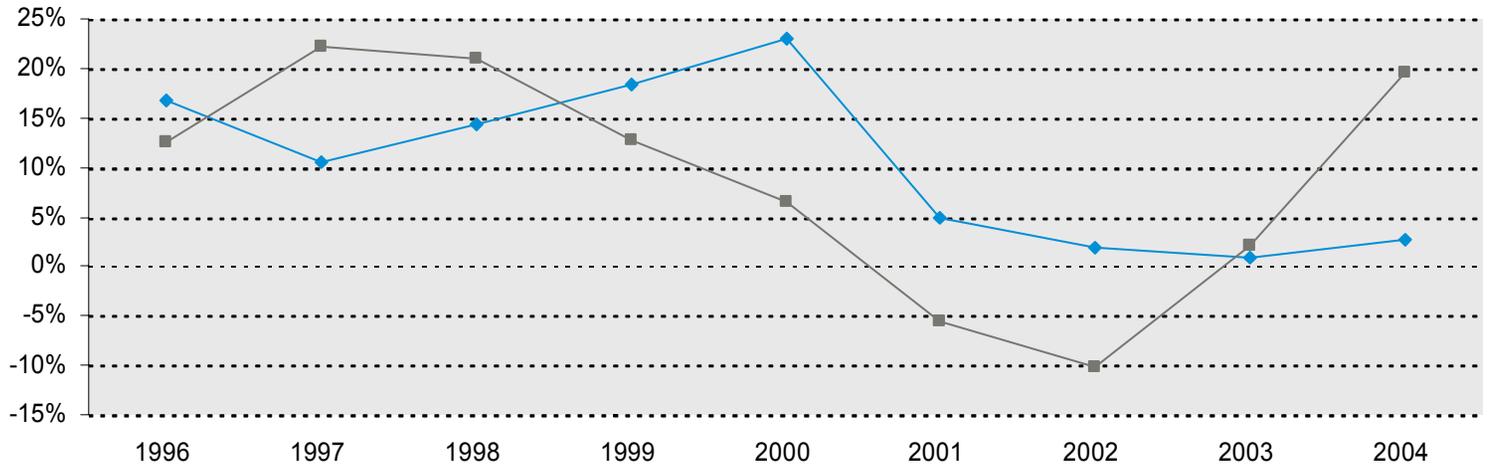
**Market and Actuarial Rates of Return for Years Ended June 30, 1996 - 2004**



**CHART 13B – Insurance**

**Market and Actuarial Rates of Return for Years Ended June 30, 1996 - 2004**

—◆— Actuarial Value  
 —■— Market Value



## SECTION 2: Valuation Results for the State Police Retirement System

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### Administrative Expenses

Current methodology includes an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

<u>Plan</u>	<u>Year End 2004 Assumption</u>	<u>Year End 2004 Actual Experience</u>	<u>Gain/(Loss)* for the Year</u>	<u>Year End 2005 Assumption</u>
Retirement	\$89,000	\$91,187	-\$2,367	\$92,000
Insurance	0	31,125	-33,693	0

\* Includes interest to year-end.

**SECTION 2: Valuation Results for the State Police Retirement System**

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**Other Experience**

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- COLAs granted in the year,
- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),

- the number of disability retirements, and
- salary increases different than assumed.

A brief summary of the demographic gain/(loss) experience of the Funds for the year ended June 30, 2004 is shown in the chart below.

*The chart shows elements of the experience gain/(loss) for the most recent year.*

---

**CHART 14**  
**Experience Due to Changes in Demographics for Year Ended June 30, 2004**

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	<b>Retirement</b>	<b>Insurance</b>
1. COLA	-\$5,072,489	N/A
2. Other	<u>-7,850,694</u>	<u>\$3,940,519</u>
3. Total	-\$12,923,183	\$3,940,519
4. Percentage of actuarial accrued liability	3.0%	2.0%

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## **SECTION 2: Valuation Results for the State Police Retirement System**

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### **D. RECOMMENDED CONTRIBUTION**

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30-year amortization of bases established each year as specified in the law governing the Plan.

Exhibit H in Section 3 provides details on these amortization bases.

The contribution rates as of June 30, 2004 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Charts 15 and 16 present the recommended contributions and reconciliations from the prior valuation

**SECTION 2: Valuation Results for the State Police Retirement System**

*This chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 15A – Retirement  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Total normal cost	\$7,448,348	16.99%	\$7,302,221	16.69%
2. Administrative expenses	92,000	0.21%	89,000	0.20%
3. Expected employee contributions	<u>-3,433,859</u>	<u>-7.83%</u>	<u>-3,422,969</u>	<u>-7.82%</u>
4. Employer normal cost: (1) + (2) + (3)	\$4,106,489	9.37%	\$3,968,252	9.07%
5. Actuarial accrued liability	437,482,425		414,881,459	
6. Actuarial value of assets	<u>385,077,195</u>		<u>413,063,576</u>	
7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6)	\$52,405,230		\$1,817,883	
8. Payment on unfunded/(overfunded) actuarial accrued liability	2,246,288	5.12%	-254,076	-0.58%
9. Total recommended contribution: (4) + (8)	<u>\$6,352,777</u>	<u>14.49%</u>	<u>\$3,714,176</u>	<u>8.49%</u>
10. Projected salary	\$43,835,208		\$43,760,832	

*This chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

**CHART 16A – Retirement  
Reconciliation of Recommended Contribution from June 30, 2003 to June 30, 2004**

<b>Recommended Contribution as of June 30, 2003</b>	\$3,714,176
Effect of COLA for retirees	\$254,125
Effect of investment loss	1,791,700
Effect of change in administrative expense assumption	3,000
Effect of net other changes	<u>589,776</u>
<b>Total change</b>	<u>\$2,638,601</u>
<b>Recommended Contribution as of June 30, 2004</b>	\$6,352,777

**SECTION 2: Valuation Results for the State Police Retirement System**

*The chart compares this valuation's recommended contributions with the prior valuation.*

**CHART 15B – Insurance  
Recommended Contribution**

	As of June 30			
	2004		2003	
	Amount	% of Salary	Amount	% of Salary
1. Employer normal cost	\$6,507,130	14.84%	\$6,508,043	14.87%
2. Actuarial accrued liability	197,604,301		184,501,205	
3. Actuarial value of assets	<u>96,622,908</u>		<u>90,747,967</u>	
4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3)	\$100,981,393		\$93,753,238	
5. Payment on unfunded/(overfunded) actuarial accrued liability	6,047,518	13.80%	5,499,654	12.57%
6. Full EANC contribution: (1) + (5)	<u>\$12,554,648</u>	<u>28.64%</u>	<u>\$12,007,697</u>	<u>27.44%</u>
7. Projected salary	\$43,835,208		\$43,760,832	
8. Prior year's funding rate	N/A	19.59%	N/A	18.94%
9. Years to reach full EANC	N/A	12	N/A	13
10. Additional amount for current year	N/A	0.75%	N/A	0.65%
11. Total recommended contribution rate: (8) + (10)	N/A	20.34%	N/A	19.59%

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**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT A**

**Table of Plan Coverage**

<b>Category</b>	<b>Year Ended June 30</b>		<b>Change From Prior Year</b>
	<b>2004</b>	<b>2003</b>	
<b>Active members in valuation:</b>			
Number	999	1,019	-2.0%
Average age	36.4	35.9	N/A
Average service	10.7	10.9	N/A
Total salary	\$43,835,208	\$43,760,832	0.2%
Average salary	43,879	42,945	2.2%
Account balances	37,658,106	35,832,095	5.1%
Total active vested members	760	763	-0.4%
<b>Vested terminated members</b>	44	21	109.5%
<b>Retired participants:</b>			
Number in pay status	843	792	6.4%
Average age	59.1	58.8	N/A
Average monthly benefit	\$2,744	\$2,655	3.4%
<b>Disabled members:</b>			
Number in pay status	35	34	2.9%
Average age	53.6	53.2	N/A
Average monthly benefit	\$1,364	\$1,357	0.5%
<b>Beneficiaries in pay status</b>	114	115	-0.9%
<b>Inactive nonvested members due a refund</b>	199	92	116.3%

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**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT B**

**Members in Active Service as of June 30, 2004  
By Age, Years of Service, and Average Salary**

Age	Years of Service								
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Under 25	50	50	--	--	--	--	--	--	--
	\$26,025	\$26,025	--	--	--	--	--	--	--
25 - 29	169	142	27	--	--	--	--	--	--
	32,131	30,776	\$39,259	--	--	--	--	--	--
30 - 34	267	83	145	39	--	--	--	--	--
	39,169	31,209	41,709	\$46,666	--	--	--	--	--
35 - 39	209	23	44	93	47	2	--	--	--
	46,000	30,920	42,017	48,139	\$52,477	\$55,422	--	--	--
40 - 44	159	7	14	30	79	25	4	--	--
	52,609	31,109	40,400	49,155	55,631	58,604	\$61,713	--	--
45 - 49	98	--	3	1	24	56	10	4	--
	57,456	--	41,308	43,764	54,151	58,796	63,434	\$59,112	--
50 - 54	37	1	--	--	--	8	16	11	1
	64,517	30,552	--	--	--	58,301	65,985	70,024	\$64,152
55 - 59	7	--	--	--	1	--	--	2	4
	73,466	--	--	--	49,476	--	--	74,484	78,954
60 - 64	1	--	1	--	--	--	--	--	--
	49,068	--	49,068	--	--	--	--	--	--
65 - 69	1	--	--	--	--	--	--	1	--
	52,356	--	--	--	--	--	--	52,356	--
70 & over	1	1	--	--	--	--	--	--	--
	33,396	33,396	--	--	--	--	--	--	--
Total	999	307	234	163	151	91	30	18	5
	\$43,879	\$30,145	\$41,432	\$47,947	\$54,373	\$58,625	\$64,565	\$67,113	\$75,994

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT C**

**Retired Lives Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	83	\$222,361.75	4	\$9,395.97	87	\$231,757.72
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	113	279,019.07	1	2,976.00	114	281,995.07
66-2/3% to beneficiary	69	214,124.99	0	0.00	69	214,124.99
50% to beneficiary	69	207,436.76	0	0.00	69	207,436.76
Pop-up option	266	794,136.22	0	0.00	266	794,136.22
10 years certain	5	19,504.99	0	0.00	5	19,504.99
10 years certain & life	25	68,402.24	0	0.00	25	68,402.24
Social Security option						
Age 62 basic	35	76,564.15	0	0.00	35	76,564.15
Age 62 survivorship	161	339,951.83	1	4,387.03	162	344,338.86
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	0	0.00	0	0.00	0	0.00
Dependent child	0	0.00	0	0.00	0	0.00
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	10	24,860.62	0	0.00	10	24,860.62
20 years certain & life	30	76,113.05	0	0.00	30	76,113.05
5 years certain	0	0.00	0	0.00	0	0.00
PLSO 12 month basic	0	0.00	0	0.00	0	0.00
PLSO 24 month basic	0	0.00	0	0.00	0	0.00
PLSO 36 month basic	0	0.00	0	0.00	0	0.00
PLSO 12 month survivor	2	8,390.77	0	0.00	2	8,390.77
PLSO 24 month survivor	1	6,095.85	0	0.00	1	6,095.85
PLSO 36 month survivor	<u>3</u>	<u>7,522.69</u>	<u>0</u>	<u>0.00</u>	<u>3</u>	<u>7,522.69</u>
Total	872	\$2,344,484.98	6	\$16,759.00	878	\$2,361,243.98

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT D  
Beneficiary Summary**

	<u>Male Lives</u>		<u>Female Lives</u>		<u>Total</u>	
	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>	<u>Number</u>	<u>Monthly Benefits</u>
Basic form	0	\$0.00	4	\$2,528.95	4	\$2,528.95
Straight life (old plan)	0	0.00	0	0.00	0	0.00
Joint & survivor						
100% to beneficiary	55	121,652.16	1	956.58	56	122,608.74
66-2/3% to beneficiary	1	1,261.87	0	0.00	1	1,261.87
50% to beneficiary	10	13,846.86	2	2,149.56	12	15,996.42
Pop-up option	6	16,310.41	2	1,215.46	8	17,525.87
10 years certain	0	0.00	1	2,439.97	1	2,439.97
10 years certain & life	0	0.00	0	0.00	0	0.00
Social Security option						
Age 62 basic	0	0.00	1	1,824.07	1	1,824.07
Age 62 survivorship	12	24,301.60	5	3,988.56	17	28,290.16
Partial deferred (old plan)	0	0.00	0	0.00	0	0.00
Widows age 60	0	0.00	0	0.00	0	0.00
Dependent child	5	1,444.25	2	482.72	7	1,926.97
Refund	0	0.00	0	0.00	0	0.00
15 years certain & life	0	0.00	0	0.00	0	0.00
20 years certain & life	2	7,856.18	4	3,611.13	6	11,467.31
5 years certain	1	19.31	0	0.00	1	19.31
PLSO 12 month basic	0	0.00	0	0.00	0	0.00
PLSO 24 month basic	0	0.00	0	0.00	0	0.00
PLSO 36 month basic	0	0.00	0	0.00	0	0.00
PLSO 12 month survivor	0	0.00	0	0.00	0	0.00
PLSO 24 month survivor	0	0.00	0	0.00	0	0.00
PLSO 36 month survivor	0	0.00	0	0.00	0	0.00
<b>Total</b>	<b>92</b>	<b>\$186,692.64</b>	<b>22</b>	<b>\$19,197.00</b>	<b>114</b>	<b>\$205,889.64</b>

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT E – Retirement**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$1,152,752	-\$20,061
Member contributions	4,875,176	4,673,538
Less administrative and investment expenses	<u>-313,604</u>	<u>-298,266</u>
Net contribution income	\$5,714,324	\$4,355,211
<b>Investment income:</b>		
Interest, dividends and other income	\$10,290,657	\$10,740,596
Recognition of capital appreciation	-12,323,070	-12,149,278
Less stock commissions and securities lending expense	<u>-695,188</u>	<u>-879,975</u>
Net investment income	<u>-2,727,601</u>	<u>-2,288,657</u>
<b>Total income available for benefits</b>	<b>\$2,986,723</b>	<b>\$2,066,554</b>
<b>Less benefit payments:</b>		
Benefit payments	-\$30,877,123	-\$27,861,736
Refunds	<u>-95,981</u>	<u>-96,707</u>
Net benefit payments	-\$30,973,104	-\$27,958,443
<b>Change in reserve for future benefits</b>	<b>-\$27,986,381</b>	<b>-\$25,891,889</b>

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT E – Insurance**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Contribution income:</b>		
Employer contributions	\$8,455,498	\$7,654,313
Less administrative and investment expenses	<u>-88,416</u>	<u>-49,703</u>
Net contribution income	\$8,367,082	\$7,604,610
<b>Investment income:</b>		
Interest, dividends and other income	\$1,792,227	\$1,449,917
Recognition of capital appreciation	885,401	-502,024
Less stock commissions and securities lending expense	<u>-177,729</u>	<u>-153,555</u>
Net investment income	<u>2,499,899</u>	<u>794,338</u>
<b>Total income available for benefits</b>	<b>\$10,866,981</b>	<b>\$8,398,948</b>
<b>Less healthcare premium subsidies</b>	<b>-\$4,992,040</b>	<b>-\$4,518,372</b>
<b>Change in reserve for future benefits</b>	<b>\$5,874,941</b>	<b>\$3,880,576</b>

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT F – Retirement  
Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$85,665	\$134,759
<b>Accounts receivable:</b>		
Investment accounts receivable	\$10,349	\$9,593
Year-end interest receivable	1,717,564	1,776,874
Year-end accounts receivable	<u>965,435</u>	<u>1,024,040</u>
Total accounts receivable	2,693,348	2,810,507
<b>Investments:</b>		
Bonds	\$107,005,876	\$116,788,407
Stocks	205,072,335	173,423,546
Mortgage	16,860,141	16,969,831
Short-term investments	3,606,746	8,285,357
Real estate	493,000	823,917
Fixed assets	<u>5,576</u>	<u>6,070</u>
Total investments at market value	<u>333,043,674</u>	<u>316,297,128</u>
<b>Total assets</b>	\$335,822,687	\$319,242,394
<b>Less accounts payable</b>	-\$102,279	-\$126,162
<b>Net assets at market value</b>	<u>\$335,720,408</u>	<u>\$319,116,232</u>
<b>Net assets at actuarial value</b>	<u>\$385,077,195</u>	<u>\$413,063,576</u>

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT F – Insurance**

**Table of Financial Information**

	Year Ended June 30, 2004	Year Ended June 30, 2003
<b>Cash equivalents</b>	\$4,897	\$13,831
<b>Accounts receivable:</b>		
Investment accounts receivable	\$4,004	\$2,431
Year-end interest receivable	236,497	199,642
Year-end accounts receivable	<u>352,513</u>	<u>651,033</u>
Total accounts receivable	593,014	853,106
<b>Investments:</b>		
Bonds	\$9,444,815	\$8,247,080
Stocks	73,925,782	59,192,228
Short-term investments	<u>6,526,520</u>	<u>4,282,323</u>
Total investments at market value	<u>89,897,117</u>	<u>71,721,631</u>
<b>Total assets</b>	\$90,495,028	\$72,588,568
<b>Less accounts payable</b>	-\$72,948	-\$34,951
<b>Net assets at market value</b>	<u>\$90,422,080</u>	<u>\$72,553,617</u>
<b>Net assets at actuarial value</b>	<u>\$96,622,908</u>	<u>\$90,747,967</u>

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**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT G – Retirement**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Member Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1996	\$7,089,000	\$2,457,000	\$29,016,903	\$204,000	\$18,348,000	\$237,515,346
1997	9,628,000	2,958,000	49,618,929	212,000	19,865,000	279,643,275
1998	9,574,000	2,711,000	37,549,643	234,000	22,925,000	306,318,918
1999	9,463,000	3,658,000	64,876,278	214,000	26,479,000	357,623,196
2000	10,216,000	4,202,000	115,239,378	239,000	27,873,000	459,168,574
2001	1,516,267	4,138,298	14,224,280	214,171	22,672,539	456,160,709
2002	-17,643	4,417,691	3,503,198	273,673	24,834,817	438,955,465
2003	-20,061	4,673,538	-2,288,657	298,266	27,958,443	413,063,576
2004	1,152,752	4,875,176	-2,727,601	313,604	30,973,104	385,077,195

**EXHIBIT G – Insurance**

**Development of the Fund Through June 30, 2004**

<b>Year Ended June 30</b>	<b>Employer Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative and Investment Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1996	\$4,604,000	\$3,802,072	\$6,000	\$1,791,000	\$27,809,267
1997	5,126,000	3,107,216	6,000	2,160,000	33,876,483
1998	5,120,000	5,031,017	6,000	2,611,000	41,410,500
1999	7,252,000	8,027,359	13,000	2,747,000	53,929,859
2000	7,818,000	12,997,853	20,000	3,014,000	71,711,712
2001	8,113,391	3,618,784	34,638	3,545,672	79,863,577
2002	9,579,899	1,496,576	57,933	4,014,728	86,867,391
2003	7,654,313	794,338	49,703	4,518,372	90,747,967
2004	8,455,498	2,499,899	88,416	4,992,040	96,622,908

\* Net of stock commissions and securities lending expense

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT H – Retirement**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1990	30	\$8,982,071	\$886,322	16	\$11,394,654
06/30/1991	30	9,963,656	937,198	17	12,624,180
06/30/1992	30	-24,502,117	-2,196,904	18	-30,901,036
06/30/1993	30	-3,706,436	-316,778	19	-4,638,712
06/30/1994	30	10,380,135	845,643	20	12,856,974
06/30/1995	30	22,729,292	1,765,022	21	27,794,358
06/30/1996	30	-17,793,855	-1,317,072	22	-21,434,735
06/30/1997	30	-31,021,470	-2,186,818	23	-36,707,760
06/30/1998	30	12,716,788	853,766	24	14,754,741
06/30/1999	30	-31,317,924	-2,002,467	25	-35,570,009
06/30/2000	30	-77,707,399	-4,732,007	26	-86,263,514
06/30/2001	30	26,106,163	1,514,038	27	28,285,984
06/30/2002	30	44,465,495	2,455,997	28	46,962,523
06/30/2003	30	61,350,968	3,227,282	29	63,085,249
06/30/2004	30	50,162,333	<u>2,513,066</u>	30	<u>50,162,333</u>
Total			\$2,246,288		\$52,405,230

\* Level percentage of salary

**SECTION 3: Supplemental Information for the State Police Retirement System**

**EXHIBIT H – Insurance**

**Table of Amortization Bases**

<b>Date Established</b>	<b>Initial Years</b>	<b>Initial Amount</b>	<b>Annual Payment*</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
06/30/1996	30	\$73,323,619	\$5,427,295	22	\$88,326,697
06/30/1997	30	8,088,952	570,220	23	9,571,673
06/30/1998	30	-2,668,212	-179,135	24	-3,095,810
06/30/1999	30	-13,378,283	-855,407	25	-15,194,675
06/30/2000	30	-6,431,546	-391,650	26	-7,139,703
06/30/2001	30	9,773,380	566,811	27	10,589,440
06/30/2002	30	-1,482,959	-81,909	28	-1,566,237
06/30/2003	30	13,657,060	718,411	29	14,043,120
06/30/2004	30	5,446,888	<u>272,882</u>	30	<u>5,446,888</u>
Total			\$6,047,518		\$100,981,393

### SECTION 3: Supplemental Information for the State Police Retirement System

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#### EXHIBIT I

#### Definitions of Pension Terms

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The following list defines certain technical terms for the convenience of the reader:

**Assumptions or Actuarial**

**Assumptions:**

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Normal Cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial Accrued Liability**

**For Actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial Accrued Liability**

**For Pensioners:**

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

**Unfunded Actuarial Accrued**

**Liability:**

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

### SECTION 3: Supplemental Information for the State Police Retirement System

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#### **Amortization of the Unfunded**

**Actuarial Accrued Liability:** Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

#### **Investment Return:**

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

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**SECTION 4: Reporting Information for the State Police Retirement System**

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## SECTION 4: Reporting Information for the State Police Retirement System

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### EXHIBIT I – Retirement

#### Summary of Actuarial Valuation Results

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The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 114 beneficiaries in pay status)		992
2. Members inactive during year ended June 30, 2004 with vested rights		44
3. Members active during the year ended June 30, 2004		999
Fully vested	760	
Not vested	239	
4. Inactive nonvested members due a refund as of June 30, 2004		199

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$7,540,348
2. Present value of future benefits		514,392,541
3. Present value of future normal costs		76,910,116
4. Actuarial accrued liability		437,482,425
Retired participants and beneficiaries	\$317,030,574	
Inactive members with vested rights	1,140,194	
Active members	118,817,731	
Inactive nonvested members due a refund	493,926	
5. Actuarial value of assets (\$335,720,408 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		385,077,195
6. Unfunded actuarial accrued liability		\$52,405,230

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**SECTION 4: Reporting Information for the State Police Retirement System**

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**EXHIBIT I – Insurance**

**Summary of Actuarial Valuation Results**

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The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$6,507,130
2. Present value of future benefits		268,659,877
3. Present value of future normal costs		71,055,576
4. Actuarial accrued liability		197,604,301
Retired participants and beneficiaries	\$116,813,080	
Inactive members with vested rights	2,291,771	
Active members	78,499,450	
5. Actuarial value of assets (\$90,422,080 at market value as reported by Carpenter, Mountjoy & Bressler, PSC)		96,622,908
6. Unfunded actuarial accrued liability		\$100,981,393

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**SECTION 4: Reporting Information for the State Police Retirement System**

**EXHIBIT II – Retirement**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$357,623,196	\$314,021,673	-\$43,601,523	113.88%	\$40,548,636	-107.53%
06/30/2000	459,168,574	336,579,763	-122,588,811	136.42%	43,596,396	-281.19%
06/30/2001	456,160,709	356,211,860	-99,948,849	128.06%	44,209,944	-226.08%
06/30/2002	438,955,465	380,790,346	-58,165,119	115.27%	43,961,844	-132.31%
06/30/2003	413,063,576	414,881,459	1,817,883	99.56%	43,760,832	4.15%
06/30/2004	385,077,195	437,482,425	52,405,230	88.02%	43,835,208	119.55%

**EXHIBIT II – Insurance**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
06/30/1999	\$53,929,859	\$125,797,150	\$71,867,291	42.87%	\$40,548,636	177.24%
06/30/2000	71,711,712	138,867,085	67,155,373	51.64%	43,596,396	154.04%
06/30/2001	79,863,577	158,261,479	78,397,902	50.46%	44,209,944	177.33%
06/30/2002	86,867,391	165,445,412	78,578,021	52.51%	43,961,844	178.74%
06/30/2003	90,747,967	184,501,205	93,753,238	49.19%	43,760,832	214.24%
06/30/2004	96,622,908	197,604,301	100,981,393	48.90%	43,835,208	230.37%

**SECTION 4: Reporting Information for the State Police Retirement System**

**EXHIBIT II – Retirement Fund**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) - (a) / (b)]</b>	<b>Increase in Assets</b>
06/30/1958	N/A	\$1,450,000	\$1,450,000	100.00%	N/A
06/30/1963	2,544,782	4,553,258	2,008,476	44.11%	619,167
06/30/1968	5,791,036	9,079,139	3,288,103	36.22%	789,709
06/30/1971	9,386,839*	11,828,727	2,441,888	20.64%	1,339,726
06/30/1974	14,557,986*	17,737,434	3,179,448	17.93%	1,935,105
06/30/1975	17,012,636*	23,182,081	6,169,455	26.61%	2,454,650
06/30/1976	20,461,762*	28,693,129	8,231,367	28.69%	3,449,126
06/30/1977	24,125,252*	34,561,413	10,436,161	30.20%	3,663,490
06/30/1978	28,509,145*	49,950,102	21,440,957	42.92%	4,383,893
06/30/1979	33,903,221*	55,391,206	21,487,985	38.79%	5,394,076
06/30/1980	40,917,165*	67,580,562	26,663,397	39.45%	7,013,944
06/30/1981	48,230,303	71,526,728	23,296,425	32.57%	7,313,138
06/30/1982	57,330,130	78,713,172	21,383,042	27.17%	9,099,827
06/30/1983	65,757,086	81,944,546	16,187,460	19.75%	8,426,956
06/30/1984	74,980,517	91,180,668	16,200,151	17.77%	9,223,431
06/30/1985	85,016,242	99,269,825	14,253,583	14.36%	10,035,725
06/30/1986	96,667,699	105,559,951	8,892,252	8.42%	11,651,457
06/30/1987	110,194,604	111,541,989	1,347,385	1.21%	13,526,905
06/30/1988	120,998,549	120,128,367	-870,182	-0.72%	10,803,945
06/30/1989	131,350,553	134,550,773	3,200,220	2.38%	10,352,004
06/30/1990	145,025,551	154,007,622	8,982,071	5.83%	13,674,998
06/30/1991	150,818,074	170,009,955	19,191,881	11.29%	5,792,523
06/30/1992**	187,791,001	182,996,056	-4,794,955	-2.62%	36,972,937
06/30/1993	200,320,968	191,653,594	-8,667,374	-4.52%	12,529,957
06/30/1994	205,320,509	206,763,310	1,442,801	0.70%	4,999,541
06/30/1995	217,504,443	241,690,631	24,186,188	10.01%	12,183,934
06/30/1996	237,515,346	244,540,812	7,025,466	2.87%	20,010,903

**SECTION 4: Reporting Information for the State Police Retirement System**

**EXHIBIT II – Retirement Fund (continued)**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) - (a) / (b)]</b>	<b>Increase in Assets</b>
06/30/1997	279,643,275	255,784,758	-23,858,517	-9.33%	42,127,929
06/30/1998	306,318,918	294,427,019	-11,891,899	-4.04%	26,675,643
06/30/1999	357,623,196	314,021,673	-43,601,523	-13.88%	51,304,278
06/30/2000	459,168,574	336,579,763	-122,588,811	-36.42%	101,545,378
06/30/2001***	456,160,709	356,211,860	-99,948,849	-28.06%	-3,007,865
06/30/2002	438,955,465	380,790,346	-58,165,119	-15.27%	-17,205,244
06/30/2003	413,063,576	414,881,459	1,817,883	0.44%	-25,891,889
06/30/2004	385,077,195	437,482,425	52,405,230	11.98%	-27,986,381

\* Includes capitalized appreciation of investments.

\*\* Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

\*\*\* Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

**SECTION 4: Reporting Information for the State Police Retirement System**

**EXHIBIT II – Insurance Fund**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Percent Unfunded [(b) – (a)/(b)]</b>	<b>Increase in Assets</b>
06/30/1990	\$6,516,517	\$64,784,801	\$58,268,284	89.94%	N/A
06/30/1991	8,931,544	74,163,248	65,231,704	87.96%	2,415,027
06/30/1992	11,717,956	88,407,634	76,689,678	86.75%	2,786,412
06/30/1993	14,285,479	95,290,099	81,004,620	85.01%	2,567,523
06/30/1994	17,410,672	110,193,139	92,782,467	84.20%	3,125,193
06/30/1995	21,200,195	118,995,732	97,795,537	82.18%	3,789,523
06/30/1996**	27,809,267	101,132,886	73,323,619	72.50%	6,609,072
06/30/1997	33,876,483	117,361,754	83,485,271	71.13%	6,067,216
06/30/1998	41,410,500	124,501,076	83,090,576	66.74%	7,534,017
06/30/1999	53,929,859	125,797,150	71,867,291	57.13%	12,519,359
06/30/2000	71,711,712	138,867,085	67,155,373	48.36%	17,781,853
06/30/2001***	79,863,577	158,261,479	78,397,902	49.54%	8,151,865
06/30/2002	86,867,391	165,445,412	78,578,021	47.49%	7,003,814
06/30/2003	90,747,967	184,501,205	93,753,238	50.81%	3,880,576
06/30/2004	96,622,908	197,604,301	100,981,393	51.10%	5,874,941

\*\* Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

\*\*\* Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

**SECTION 4: Reporting Information for the State Police Retirement System**

**EXHIBIT III**

**Supplementary Information Required by the GASB**

<b>Valuation date</b>	June 30, 2004
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Level percent of salary
<b>Remaining amortization period</b>	16 to 30 years
<b>Asset valuation method</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

**Actuarial assumptions:**

Investment rate of return	8.25%
Payroll growth	5.00%

**Plan membership:**

Retired participants and beneficiaries receiving benefits	992
Terminated members entitled to, but not yet receiving benefits	44
Active members	<u>999</u>
Total	2,035

**Contracts in Force – Retirees and Dependents**

<b>Age</b>	<b>Total</b>	<b>100% Paid</b>	<b>75% Paid</b>	<b>50% Paid</b>	<b>25% Paid</b>	<b>0% Paid</b>
Single; Pre-Medicare	226	219	1	5	0	1
Family; Pre-Medicare	144	144	0	0	0	0
Parent Plus; Pre-Medicare	45	43	1	0	1	0
Couple; Pre-Medicare	256	253	3	0	0	0
Medicare Regular	13	9	0	3	1	0
Medicare High Option	<u>326</u>	<u>320</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>0</u>
Total	1,010	988	8	9	4	1

**SECTION 4: Reporting Information for the State Police Retirement System**

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**EXHIBIT IV**

**Actuarial Assumptions and Actuarial Cost Method**

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**Mortality Rates:**

*Healthy:* 1983 Group Annuity Mortality Table\*

*Disabled:* Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security

\* Rates increased by 0.05% for active members.

**Termination Rates before Retirement:**

Age	<u>Rate (%)</u>			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.09	0.07	0.04	1.82
25	0.10	0.08	0.04	1.82
30	0.11	0.08	0.05	2.03
35	0.14	0.10	0.07	1.46
40	0.17	0.12	0.13	0.90
45	0.27	0.15	0.26	0.45
50	0.44	0.21	0.53	0.00
55	0.66	0.30	0.99	0.00
60	0.97	0.47	1.74	0.00

**SECTION 4: Reporting Information for the State Police Retirement System**

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<b>Retirement Rates:</b>	60% will retire as soon as eligible for unreduced benefit and balance will continue until age 55.
<b>Retirement Age for Inactive Vested Participants:</b>	55
<b>Percent Married:</b>	100%
<b>Age of Spouse:</b>	Females 3 years younger than males.
<b>Dependent Children:</b>	For an employee's duty related death benefits, it is assumed that the employee is survived by two dependent children each age 6.
<b>Net Investment Return:</b>	8.25%

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<b>Salary Increases:</b>	<b>Years of Service</b>	<b>Rate (%)</b>
	1	12.00
	2	10.00
	3	8.00
	4 or more	6.50
<b>Payroll Growth:</b>	5.0%	

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**SECTION 4: Reporting Information for the State Police Retirement System**

**Retiree Medical Insurance Election:** Future retirees will select medical coverage in the same proportion that current retirees have selected coverage.

**Monthly Contribution Rates:**

		<b>Pre-Medicare Coverage</b>			
		<b><u>Rate in Effect on Valuation Date</u></b>			
		<b><u>Single</u></b>	<b><u>Family</u></b>	<b><u>Parent Plus</u></b>	<b><u>Couple</u></b>
	Region 1	\$288.36	\$648.88	\$389.32	\$584.00
	Region 2	312.00	702.00	421.20	631.80
	Region 3	436.00	981.20	588.72	883.08
	Region 4	286.16	643.92	386.36	579.52

		<b><u>Medicare Rate</u></b>		<b><u>Contracts in Force</u></b>	
<b><u>Carrier</u></b>		<b><u>Low Option</u></b>	<b><u>High Option</u></b>	<b><u>Low Option</u></b>	<b><u>High Option</u></b>
	Anthem Blue Seniors	\$110.00	\$315.44	3,898	23,013
	Bankers Life Medicare	82.70	195.35	913	618

<b>Weighted Medicare Coverage</b>		
<b><u>Rate in Effect on Valuation Date</u></b>		
	<b><u>Low Option</u></b>	<b><u>High Option</u></b>
All Members	\$104.82	\$312.30

**Medical Contribution Rate Increases:**

<b><u>Year</u></b>	<b><u>Rate(%)</u></b>
2004-2005	10.00
2006-2010	9.00
2011-2015	8.00
2016-2020	7.50
2021 and thereafter	7.00

**SECTION 4: Reporting Information for the State Police Retirement System**

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**Members with Multiple Service Records:** For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

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**Administrative Expenses:** \$92,000

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**Actuarial Value of Assets:** Market value of assets less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.

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**Actuarial Cost Method:** Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

**SECTION 4: Reporting Information for the State Police Retirement System**

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**EXHIBIT V**

**Summary of Plan Provisions**

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This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

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**Plan Year:** July 1 through June 30

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**Normal Retirement:**

*Age Requirement* 55

*Service Requirement* None

*Amount* If a member has at least 60 months of service, the monthly benefit is 2.50% times final average compensation time years of service.

Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used.

If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

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**Early Retirement:**

*Requirement* Age 50 with 15 years of service or any age with 20 years service.

*Amount* Normal retirement benefit reduced by 5.5% per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

**SECTION 4: Reporting Information for the State Police Retirement System**

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**Disability:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	<p>Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's 55<sup>th</sup> birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 or more years of service credit, actual service credit will be used.</p> <p>A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than 25% of the member's final monthly rate of pay plus 10% of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is 40% of the member's final monthly rate of pay.</p>

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**Vesting:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	60 months
<i>Amount</i>	Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age.
<i>Normal Retirement Age</i>	55

## SECTION 4: Reporting Information for the State Police Retirement System

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### Pre-Retirement Death Benefit (not in line of duty):

<i>Requirement</i>	Any age with 60 months service or age 65 with 48 months service.
<i>Amount</i>	Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a 100% joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.

### Spouse's Pre-Retirement Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of 25% of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.

### Dependent Non-Spouse's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	The non-spouse may choose (1) a \$10,000 lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

### Dependent Child's Death Benefit (in line of duty):

<i>Requirement</i>	None
<i>Amount</i>	10% of member's final monthly rate of pay up to a maximum of 40%.

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### Post-Retirement Death Benefit:

<i>Lump-sum Benefit</i>	\$5,000
<i>Husband and Wife</i>	The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

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### Insurance Plan for Retirees:

The Retirement System pays a portion of medical premiums for retirees, and in the case of hazardous duty retirees, their dependents and beneficiaries. The Insurance Fund will pay 0%, 25%, 50%, 75%, or 100% of the premiums depending on retiree eligibility as reported by the System.